

THE CHARTERED SURVEYOR

The Journal of

THE ROYAL INSTITUTION OF CHARTERED SURVEYORS

VOL. 93

JANUARY, 1961

NO. 7

Editorial Notes

The Internal Affairs of the Institution

The March, 1960, issue of *The Chartered Surveyor* (page 457-465) contained an exhaustive report on the internal affairs of the Institution, and made recommendations with regard to many matters of interest and concern to individual members. Two important conclusions of the report were that the Institution must improve the service to its members and secondly that the Institution must develop a more extensive programme of public relations activities. To that end, alterations were proposed in the committee structure—the Branches and Public Relations Committee should in future handle public relations only; and a new Committee should be set up entitled the Internal Services Committee. This new committee should be responsible for a wide field of activities, including some matters which were not the specific responsibility of any committee.

The Council have accepted this recommendation on the committee structure and the Public Relations Committee are now responsible for public relations activities only. The Internal Services Committee have divided their very wide field of responsibility between four executive Panels; the terms of reference of the Committee and of the Panels, and the composition of the Panels, are published on page 343 of this issue.

Future of the Annual Conference

One of the first duties of the Meetings Executive Panel of this Committee was to make detailed recommendations to the Council on the future arrangements for the Chartered Surveyors Annual Conference. At a recent meeting, the Council gave authority for plans to be made for Conferences in each of the five years after 1961, and preliminary enquiries have already begun. The Council decision is published on page 342 *post*.

The 1961 Conference

The next Chartered Surveyors Annual Conference will be held at the University of Leicester on 4th-8th July, 1961. Arrangements are well ahead and full details of the programme will be issued at an early date.

The opening address at the Conference will be given by Lord James of Rusholme, High Master of Manchester

Grammar School, who will speak on "The professions in contemporary society".

Professor Philip White, M.Sc. (Fellow) of the University of British Columbia, is flying to England specially to give the Gold Medal Address on "Urban Redevelopment Policies," in which he will compare the policies of the United Kingdom, United States and Canada regarding the redevelopment of urban areas.

The Conference programme will include, as in previous years, discussion groups and sectional meetings, as well as visits to places of professional interest.

Arrangements for Ordinary General Meetings

The Meetings Executive Panel have also decided to introduce new arrangements for Ordinary General Meetings, starting in January, 1961. In future, copies of papers will be available to members, on request, before the meeting. The speaker will assume that the paper has been read, and he will be asked to give a 25-minute introduction to his paper. It is hoped in this way to give members more opportunity for asking questions and contributing to the discussion. By placing this ammunition in the hands of members, they will have an opportunity to come, fully-armed, to meetings at Headquarters.

Sessional Programme

Fire Precautions in Buildings

Since the first ordinary general meeting of 1961 occurs at the very beginning of January there is little time to implement these arrangements. At this January meeting Mr. F. W. Delve, C.B.E., Chief Officer of the London Fire Brigade, is to give a talk, illustrated by a film strip, on "Fire Precautions in Buildings." The meeting will be held on 2nd January and Mr. Delve will cover a wide field. He will draw attention to the recent alarming rise in fire losses and to the need for constant vigilance in fire precautionary measures. The special problems presented by high buildings will be referred to and Mr. Delve will deal in some detail with the various measures which occupiers can either be required to adopt, or may adopt voluntarily, with the object of reducing fire losses. The meeting will be sponsored by the South-West London Branch.

Winter Agricultural Conference

A one-day conference on agriculture is to be held at the Institution on Monday, 9th January, 1961. Although on agricultural subjects, the conference is not restricted to agricultural members. The morning session at 11 a.m. will be addressed by Mr. G. P. Wibberley, PH.D., B.Sc., on the subject of "Farm Size." Mr. Wibberley is a Reader at Wye College. In the afternoon Mr. R. B. Verney, Vice-President of the Country Landowners Association, and Mr. G. B. Redmayne will address the conference on "The Future of the Landlord and Tenant System."

Some Reflections on Property Development

Mr. E. C. Uren will speak at the general practice general meeting to be held at the Institution on Monday, 23rd January, 1961, on "Some Reflections on Property Development". In his paper Mr. Uren reflects on property development from the point of view of a chartered accountant engaged in the property development, construction and ancillary industries for many years. He is concerned not only with the factors which give rise to profitability in these fields but also with the quality of service given by contractors, developers and others both to their clients and also to the public generally.

In an activity which calls for contributions from many specialised branches of knowledge and the application of many different skills and techniques, he shares the current awareness of the problems to be faced in reconciling apparently conflicting interests and asks whether we may expect to see the trend of future development materially affected by the recognition of these problems.

Share Valuations: Why and How?

Sooner or later most forms of property have to be valued; if not for a sale, it may be for Inland Revenue purposes. Shares in private limited companies come under this definition of property and arriving at a valuation can present a difficult problem. It is incorrect to assume that a balance sheet gives figures that can be accepted for valuation purposes; it is even incorrect to assume that a block of shares must have the same value whoever the purchaser may be.

Mr. T. A. Hamilton Baynes, M.A., F.C.A., discusses such matters and gives the accountant's approach to the valuation of shares in companies which have no official quotation, at the ordinary general meeting to be held at the Institution on Monday, 6th February, 1961. The meeting will be sponsored by the North-West London Branch.

Copies of the paper will be available, on request, from the Institution before the meeting.

New Book on Rating in Scotland

From January, 1961, Lands Valuation Assessors throughout Scotland will be issuing notices showing the new valuations which come into force on Whitsunday, 1961, and upon which rates will, in most cases, be levied until 1966. The Scottish Branch of the Institution are publishing a "Guide to the 1961 Revaluation" which outlines the important changes made by the 1956 Act. It is hoped that this guide will minimise confusion and assist ratepayers and their advisers with the problems which will undoubtedly arise in 1961. It will be recalled that early in 1957 the Institution published a Guide to the 1956 Act which received considerable publicity and had a wide circulation. The new booklet is in a sense a sequel to the interests of continuity and of a fuller association of the present position, a short history of the evolution until 1961 has been included, the greater emphasis is placed on the 1961 position.

Every ratepayer in Scotland will be affected by the revaluation. There has already been much uninformed criticism of the provisions of the Act and it is clear that a Guide to the changes will meet a public need. The booklet is intended for the "man in the street" but inevitably some technical terms and examples must be used. A simplified separate pamphlet pin-pointing the main changes is available with each booklet. The price has been kept to a minimum and the booklet will be available from booksellers, from the Scottish Headquarters of the Institution, 7, Manor Place, Edinburgh, and from the Glasgow Office at 48, West Regent Street, at a cost of 2s. 6d. (3s. by post).

New Towns for Old

The link between John Betjeman, the Earl of Euston, the Archbishop of Canterbury and Duncan Sandys may seem tenuous to those unacquainted with the work of the Civic Trust. In fact all four, as Trustees or Advisers, share a common aim in the promotion of beauty and the elimination of ugliness in town, village and countryside—the principle behind the Trust. Founded by Duncan Sandys, when Minister of Housing and Local Government, as an independent and unofficial body, the Trust has, in the short space of three years, established itself firmly on the map and already can count many fine achievements to its credit.

Perhaps the best-known of the Trust's activities have been its face-lifting operations performed on old and tired streets, drably typical of the British urban scene. Magdalen Street, Norwich, the experimental guinea-pig, proved that a coat of paint, an eye for colour and a firm attack on unsightly advertisements could completely transform a provincial street for as little as £80 a head. The idea snowballed and currently over 300 similar schemes are underway in places as far apart as Edinburgh, Caernarvon and Windsor High Street.

The Trust still cannot afford to rest on its laurels. Duncan Sandys writes in its recently issued Report "The First Three Years"—"we are already finding it hard to keep apace with the opportunities which our own activities are creating".

Travel by Tube

In these days of congested roads, disused canals and insolvent railways, the need for a new means of bulk transportation is self-evident. Pipelines may well be the answer. In the House of Lords on 24th November, 1960, Lord Lucan made a plea for co-ordination in the building of pipelines so as to prevent the chaos which resulted from the haphazard construction of canals and railways in the 18th and 19th centuries.

Coal, flour, sugar and cement are some of the products which can be transported by pipeline and it is possible to use one pipeline for different products—by placing a plug between one product and the next: this obviates the serious disadvantage that a pipeline has to be first filled before one can obtain anything from the other end—a 12-inch diameter pipeline 200 miles in length contains over 5 million gallons.

The Government are making an examination of the whole question of pipeline development and the Minister of Power has promised a statement on the results of this examination early in the new year.

The Trunk Pipelines Bill, which contains a proposal to build Britain's first common carrier pipeline from Canvey Island to Denham, is unlikely to receive Government support at present. The company behind this scheme, Trunk Pipelines Ltd., plan to operate this pipeline as an independent venture open to all firms willing to pay the requisite charge.

The Presidential Address

The Presidential Address by Mr. J. D. Trustring Eve, which was delivered on 14th November, 1960, was published in The Chartered Surveyor for December, 1960. A vote of thanks to the President was proposed by Mr. John L. Postlethwaite (Immediate Past-President) and seconded by Mr. E. C. Strathon (Senior Vice-President); their remarks are published below.

Mr. J. L. POSTLETHWAITE (Immediate Past-President) said it was a privilege and a pleasure to propose a vote of thanks to the President for his excellent and timely address, particularly in the presence of Mrs. Trustring Eve who, he felt sure, was glad it was over! and also in the presence of many members of Mr. Trustring Eve's family who were present together with other distinguished guests.

He had served with the President on the Council of the Institution for many years, and many of the things which they had had to do were in common. Perhaps the commonest thing they had to do was to go together to give evidence before the Sorn Committee, a committee considering rating valuation in Scotland. The idea was that the President and himself would give evidence as to the practice in England, and as it was just after the second war they felt they were on a very good wicket, because they could say anything and bet their bottom dollar that it was being done somewhere at some time!

With working life becoming more hectic and competitive it was right to pause and to think of the professional way of life, more particularly in relation to the profession of surveying, as the President had invited members to do in his Address. He had referred to the high qualities of the professions of law, medicine, engineering, architecture and accountancy, and high though the profession of the chartered surveyor was, there was some little way to go before the standards of those other professions were achieved.

The President had pointed out that the ultimate test was what the profession looked like to the public generally. Judging by some of the advertisements which he had seen—regrettably from some of the members of the Institution—he suspected that the public would not quite know what to think. He had in mind advertisements which all too frequently appeared at railway stations, claiming special ability to deal with industrial properties or with licensed premises, or a special ability in rating. They were not greatly important to many members but they were important to the membership as a whole. When such advertisements were forbidden—as he hoped they ultimately would be—chartered surveyors would share the very high status of the professions to which he had already referred.

He desired to take the liberty of repeating a short sentence from the Presidential Address referring to rules of behaviour outside a minimum code of conduct. It was: "They must be based upon a genuine desire to serve the client's interest and the public. And they should be accompanied by a genuine desire also not to gain position or fees at the expense of other members and, above all, to be content to depend for position and practice upon a reputation for good conscientious work, and not at all upon boasting and self-advertisement." Those words should be re-read and memorised and should become uppermost in the minds of members.

The high percentage of members of the Institution engaged in quantity surveying, in general practice, and in public service was frequently referred to. It was true that this was so, but it was fortunate that they, together with members

engaged in other branches or parts of the profession, came together under one umbrella. A great debt of gratitude was owed to the members of all parts for the time and effort devoted to the common good.

The President had also referred to wider collaboration with other professional societies. In the main, wider collaboration would be good, but on one condition only, namely that it would not lower our standard, but would tend rather to raise the standard of the others. He was referring to the wider collaboration with societies outside those who subscribed to the code of conduct.

The Institution was grateful to the President for his Address, and it was with the greatest pleasure that he proposed a hearty vote of thanks to Mr. Trustring Eve for it.

Mr. E. C. STRATHON (Senior Vice-President), in seconding the vote of thanks, said it had occurred to him that a President's Address was rather akin to a budget speech of the Chancellor of the Exchequer. They were both delivered in the rather chilly quarters of the year, and what did those who waited hope to hear? Some cheerful news, pats on the back all round and a good time in the future. Then came the inevitable question "What is the cost of all this going to be?" What was the President's estimate of the future of the profession? He had cheered up those present by a delightful sketch in a most brilliant fashion of what the chartered surveyor did and what he should do.

What about the cost? The cost had been outlined again by the immediate Past-President—the cost of hard work, of endeavour to collaborate, to create and to maintain the standards by which those in the profession must live, and in particular the way in which the members of the Institution must live. A contemporary journal would probably describe it as "stern stuff," and stern stuff was always something to take note of. The President's Address should be taken note of by careers masters and sixth formers right through to those members who were in practice at the present time, and who felt that they practised in the right way.

Mr. Strathon was permitted to refrain from measuring the result of the President's exercise, and that he would do, because he had his eye on the second half of the year of office, and the President's powers of delegating to Vice-Presidents functions to the far ends of the British Isles! He was what was professionally described as maintaining his seat on the fence! However, that did not prevent him voicing what must be in the minds of all those present, that is, the quality of the President's Address was as expected, together with the brilliant flashes and that puckish independence of mind which members had grown to know and to like. It characterised his handling of their affairs, and long might it last; all this would ensure that the Address would take its place amongst all the great speeches which had been heard in the hall of the Institution.

It was a privilege and a great pleasure, in the name of all members of the Institution present and those who would be reading the Address, to second the vote of thanks which all would give so fervently and unreservedly.

Council and Committee Proceedings

EXTRACTS FROM THE MINUTES OF RECENT MEETINGS

At a meeting of the Council held on 14th November, 1960, the following were present: Mr. J. D. Trustram Eve (President) in the chair, Mr. George Alexander, Sir Kenneth Atkinson, Messrs. W. M. Balch, J. W. G. Barr, E. J. Battersby, Guy Biscoe, Brigadier Guy Bomford, Messrs. E. B. Bowyer, F. J. Hugh Brackett, A. T. Brett-Jones, W. E. A. Bull, E. C. Cattermole, J. H. C. Chesshire, O. S. Chesterton, John Clark, R. H. Clutton, G. L. Coates, A. G. S. Cobb, B. J. Collins, G. A. Coombe, D. J. Cowen, Clifford Dann, A. W. Davson, W. A. Ebbutt, H. Brian Eve, W. C. Farnsworth, F. G. Fleury, H. A. Frazer, Arthur Gadd, K. E. B. Glenny, W. S. Goodbody, G. H. Heywood, S. Vyvian Hicks, William James, H. James King, William Minifie, J. G. Osborne, C. D. Pilcher, P. M. Poole, J. L. Postlethwaite, Rex Procter, H. O. Reed, H. I. Richmond, W. H. Rothwell, P. E. Rowlinson, C. D. Shott, E. C. Strathon, M. F. Strutt, Cyril Sweett, G. R. Symmons, R. E. Symonds, P. W. Trumper, E. J. Wainwright, G. D. Walford, E. R. Webster, H. W. Wells, Harold Williams, J. D. Wix and E. Harold Palmer (Honorary Secretary).

Members Deceased

The President reported the loss sustained by the Institution in the deaths of the following members: Mr. Jeffery Baynes, Professional Associate (1954); Mr. W. B. Bond, Fellow (1922); Mr. B. C. Britton, Fellow (1918); Mr. W. D. Cateugh, Professional Associate (1901); Mr. R. F. Collins Professional Associate (1926); Mr. H. F. Dunster, Fellow (1919); Mr. H. A. Glover, Fellow (1894); Mr. G. E. Hughesdon, Fellow (1911); Mr. F. W. Knight, Fellow (1902); Mr. William Mackie, Professional Associate (1929); Mr. J. B. Morrison, Fellow (1910); Mr. T. M. Stanier, Fellow (1908); Mr. P. J. Symmons, Fellow (1902); Mr. E. T. Taylor, Fellow (1902); Mr. J. E. J. Toole, Fellow (1929); and Mr. A. W. Wilkinson, Fellow (1911).

The President made special mention of Mr. J. E. J. Toole, who had been Chief Valuer to the London County Council for many years.

Members of the Council stood in silence as a mark of respect to the memory of the deceased members, and instructed the Secretary to record in the Minutes and to convey to the next of kin the sincere sympathy of the Council.

Members of Long Standing

The Council have congratulated the following who have completed sixty years' corporate membership of the Institution: Messrs. A. E. Baylis, M.B.E., H. K. Blyth and G. J. Bruzaud (Fellows); Mr. O. F. Cooke-Yarborough (Professional Associate); Messrs. W. R. Davidge and J. W. Earle (Fellows); Mr. R. G. Gurney (Professional Associate); Messrs. A. W. Hall, N. B. Kemsley, F. C. Knibb, Charles Living, F. P. Pratt, E. W. Saunders and C. F. Stone (Fellows); Mr. F. E. Strudwick (Professional Associate); Mr. F. L. M. Walsh (Fellow), and Mr. E. B. Wetenhall (Professional Associate).

The Chartered Surveyors Annual Conference

The Council have authorised the Internal Services Committee to proceed with plans for Conferences in each of the five years after 1961, on the understanding that the policy to be followed thereafter be reviewed in (say) 1964.

Rebuilding Committee

It has been decided to reconstitute the Special (Rebuilding) Committee and the following members have been appointed:

Messrs. Guy Biscoe (*Chairman*), N. W. Bowie and J. H. C. Chesshire (Fellows), Miss C. Christie (Professional Associate), Messrs. Cecil Clutton, G. A. Coombe and W. S. Goodbody (Fellows), Mr. J. P. Hollamby (Professional Associate), Messrs. C. D. Pilcher, A. L. Strachan, M. H. Thackray and P. W. Trumper (Fellows).

Special (Centenary) Committee

The following have been appointed as a committee to consider plans for the celebration of the centenary of the Institution in 1968:

Mr. W. M. Balch (Fellow) (*Chairman*), Messrs. E. J. Battersby, R. B. Caws, O. S. Chesterton, Anthony Clapham, B. J. Collins, F. G. Fleury, D. P. Iggulden and William James (Fellows), Mr. P. G. Laws (Professional Associate) and Messrs. Rex Procter and E. Rutherford Young (Fellows), together with the President and the Honorary Secretary *ex-officio*.

"The Chartered Surveyor": Request from University Microfilms Limited

University Microfilms Limited have approached the Institution with a request to microfilm *The Chartered Surveyor*. This firm maintains a catalogue of the journals they film, the catalogue being distributed to about 4,000 libraries of all kinds, and all over the world. The Council have decided to grant the request.

At the meeting of the Council held on Monday, 5th December, 1960, there were present: Mr. J. D. Trustram Eve (President) in the Chair, Mr. George Alexander, Sir Kenneth Atkinson, Messrs. W. M. Balch, J. W. G. Barr, E. J. Battersby, C. P. Bowyer, E. B. Bowyer, F. J. Hugh Brackett, W. R. Brackett, A. T. Brett-Jones, E. C. Cattermole, J. H. C. Chesshire, O. S. Chesterton, John Clark, R. H. Clutton, G. L. Coates, B. J. Collins, G. A. Coombe, D. J. Cowen, A. W. Davson, W. A. Ebbutt, J. Gordon Elsworth, W. C. Farnsworth, F. G. Fleury, H. A. Frazer, Arthur Gadd, K. E. B. Glenny, W. S. Goodbody, J. C. Harris, G. H. Heywood, H. P. Hobbs, William James, H. James King, W. N. D. Lang, William Minifie, J. Cassels Pinkerton, P. M. Poole, J. L. Postlethwaite, H. O. Reed, H. I. Richmond, W. H. Rothwell, P. E. Rowlinson, H. Lacy Scott, C. D. Shott, J. Francis Smith, E. C. Strathon, Cyril Sweett, G. R. Symmons, R. E. Symonds, P. W. Trumper, E. J. Wainwright, G. D. Walford, E. R. Webster, H. W. Wells, Harold Williams, J. D. Wix, O. F. Wooding and E. Harold Palmer (Honorary Secretary).

Members Deceased

The President reported the loss sustained by the Institution by the deaths of the following members: Mr. F. E. Dixon, Professional Associate (1904); Mr. A. N. Floyd, Fellow (1910); Mr. G. C. Hennings, Professional Associate (1948); Mr. P. L. Perry (Candidate for Studentship); Mr. C. H. Southorn, Fellow (1895); Mr. George Spyer, Fellow (1903); Mr. P. H. Thomas, Fellow (1902).

Members of the Council stood in silence as a mark of respect to the memory of the deceased members and instructed

the Secretary to record in the Minutes and to convey to the next of kin the sincere sympathy of the Council.

Honours and Appointments

The Council have congratulated Sir Malcolm Trustram Eve, G.B.E., M.C., T.D., Q.C. (Honorary Member) on his appointment by the Queen as Gentleman Usher of the Purple Rod in the Most Excellent Order of the British Empire.

The Council have congratulated Mr. W. G. Webb (Fellow) on his appointment as Chief Valuer to the London County Council *vice* the late Mr. J. E. J. Toole.

Transfers to the Fellowship

The Council have approved the following transfers to the Fellowship under the ordinary rules, subject to the fulfilment by the transferred member of his obligations under the Bye-Laws: Messrs. J. H. Allan, J. N. Aves, W. J. Aynsley, K. M. Barnett, A. J. W. Branson, Thomas Broad, D. J. Bye, K. H. Caudle, W. L. Chesser, C. E. Colyer, F. M. Crow, N. M. Daniel, H. J. Daniels, Q. G. M. Davis, F. G. Davy, G. R. Dunn, H. M. Evans, P. H. M. Fielding, R. F. Fisher, E. B. Fleming, Leonard Fletcher, Frank Gee, R. C. Greaves, J. D. M. Hardie, Graham Haynes, Tobias Hitman, G. A. Hockley, R. S. Hodge, J. R. Hoyle, A. M. Hurry, A. B. James,

J. G. C. Jebb, P. G. Jones, Duncan Kennedy, W. L. Lee, R. W. Leeper, K. W. J. Lowe, H. B. Mack, J. I. McGillivray, G. E. Manson, C. H. H. Markes, B. F. Marrable, P. W. Martin, J. H. Maynard, D. J. Morgan, J. A. C. Morris, T. D. H. Morris, Wright Musker, L. B. Nicolson, E. D. M. Peacock, R. A. Pollard, A. T. Rayne, J. H. Rendle, J. R. E. Sedgwick, S. A. Settle, A. J. Sewell, D. R. Smith, D. V. Smith, R. L. Smith, G. D. Stratford, E. A. Tate, J. R. Thomas, P. H. Tresidder, C. J. Wheatman, C. H. White, B. B. Whittaker, W. W. Willcocks, R. G. Williams, J. D. Willis, P. W. V. Winther and G. F. Woolmer.

Council Representation

The Council have decided that there should, in future, be four, instead of three, representatives of the Junior Organisation of the Council. They have also decided that the Warwickshire, Worcestershire and South Staffordshire Branch and the North Staffordshire Branch should continue to be represented by one Member of Council.

The Council have been informed that the representation of Professional Associates on the Council was being examined. (The Report on "The Internal Affairs of the Institution," published in the March, 1960, issue of *The Chartered Surveyor*, referred to this subject).

Committee Officers: Session 1960-1961

The following officers of Committees have been elected for the session 1960-61:—

Agriculture and Forestry Committee: Chairman, Mr. Mark F. Strutt; *Vice-Chairman*, Colonel John Clark; *Honorary Secretary*, Mr. P. W. Trumper.

Educational Policy Committee: Chairman, Mr. H. Brian Eve; *Vice-Chairman*, Mr. G. L. Coates; *Honorary Secretary*, Mr. W. H. Rees.

Finance Committee: Chairman, Mr. G. D. Walford; *Vice-Chairman*, Mr. J. D. Russell-Davis; *Honorary Secretary*, Mr. A. H. French.

Land Surveyors Committee: Chairman, Brigadier Guy Bomford; *Vice-Chairman*, Brigadier A. H. Dowson; *Honorary Secretary*, Mr. Alfred Stephenson. *Parliamentary Committee: Chairman*, Mr. W. S. Goodbody; *Vice-Chairman*, Mr. C. D. Shott; *Honorary Secretary*, Mr. H. D. S. Stiles.

Public Relations Committee: Chairman, Mr. B. J. Collins; *Vice-Chairman*, Mr. J. D. Wix; *Honorary Secretary*, Mr. Clifford Dann.

Special (Control of the Profession) Committee: Chairman, Mr. C. D. Pilcher.

Internal Services Committee

1. OFFICERS AND TERMS OF REFERENCE

The following have been elected as officers for the session 1960-61:

Chairman, Mr. William James; *Other Officers*, Mr. Arthur Gadd (Chairman of the Publications Executive Panel); Mr. J. Francis Smith (Chairman of the Technical Information and Research Executive Panel); Mr. E. J. Wainwright (Chairman of the Library Executive Panel); Mr. J. D. Wix (Chairman of the Meetings Executive Panel). Mr. Donald Taylor, Mr. R. B. Caws, Mr. C. H. Bailey and Mr. E. J. Battersby have been elected Vice-Chairmen of the Publications, Technical Information and Research, Library, and Meetings Executive Panels respectively.

The Committee will be primarily responsible for organising the services which the Institution provides for its members as a whole. It should co-operate with sectional and Branch Committees to provide services for the members they represent, and should co-ordinate these where necessary. It should keep under review the whole field of relations between the Council, the Branches and individual members.

The Officers of the Committee will form a steering group responsible for—

(i) planning and co-ordinating the work of the Committee;

(ii) co-ordinating relations with the Branches and members; and

(iii) matters of policy arising in connection with the administration of the Appointments Register.

The work of the Committee will be undertaken (initially) by four executive panels, as follows:—

(i) *Publications* Policy relating to *The Chartered Surveyor*.

Technical literature.

Dissemination of information to members.

(ii) *Library* Supervision of Library services; collections; portraits.

(iii) *Meetings* Ordinary General Meetings.

Receptions for new members.

Facilities in headquarters building. Chartered Surveyors Annual Conference.

Social functions (other than sectional functions).

(iv) *Technical Information and Research* Development of a technical information service.

Supervision of arrangements for dealing with technical queries.

Co-ordination of research.

2. COMPOSITION OF EXECUTIVE PANELS

The Committee have appointed the following members to serve on the four Executive Panels. The Officers of the Committee are *ex-officio* members of all Executive Panels.

Publications Panel

Mr. Arthur Gadd (*Chairman*), Mr. Donald E. Taylor (*Vice-Chairman*), Messrs. C. A. Biddle, T. E. Burns, L. A. Culliford*, N. de Rome, Roger Emeny, J. P. Hatfield, P. G. Laws, E. W. Leaning, O. F. Wooding and E. Rutherford Young. (*Died during the session.)

Meetings Panel

Mr. J. D. Wix (*Chairman*), Mr. E. J. Battersby (*Vice-Chairman*), Messrs. R. G. Fanshawe, C. S. Farnes, A. G. Hood, K. R. C. Jenkin, E. A. Miskin, E. G. Outen, K.

Randall, B. L. Richards, K. M. Sanders, P. H. Toy and J. L. Vigers.

Library Panel

Mr. E. J. Wainwright (*Chairman*), Mr. C. H. Bailey (*Vice-Chairman*), Messrs. C. A. Martin French, A. R. Hanbury-Bateman, C. E. Kenney, J. C. P. Langton, E. Goodwin Law, Christopher Noble, R. J. R. Sawyer and E. Morley Smith.

Technical Information and Research Panel

Mr. J. Francis Smith (*Chairman*), Mr. R. B. Caws (*Vice-Chairman*), Messrs. Bryan Anstey, Guy Biscoe, F. J. H. Brackett, V. E. A. Morris, C. M. Nott and H. W. Wells; Dr. N. Lichfield and Messrs. James Nisbet, E. R. Parrinder, A. L. Strachan and G. D. Sykes (*co-opted members*).

Education**EDUCATION TRUST**

The Trustees of the Institution's Education Trust invite applications from chartered surveyors or other persons who may wish to undertake research or further study into matters relating to the theory and practice of surveying in any of its branches.

Applications, which should contain details of the proposed studies or research and an indication of the expenditure which it is expected will be incurred, should be submitted to the Honorary Secretary to the Trust at 12, Great George Street, London, S.W.1, by 8th February, 1961.

The Trustees have recently made the following awards:

Mr. W. G. Collins, B.Sc., F.R.G.S., of the Department of Civil Engineering in the University of Leeds—£300.

Mr. C. E. Hart, M.A. (Fellow), F.L.A.S., Lecturer in Forestry at the Royal Agricultural College, Cirencester—£200 (from July, 1961).

The purposes for which the Trust is established are to promote and advance education, study and research in the field of surveying in any of its branches, and this will be done by the grant of scholarships, awards or prizes to chartered surveyors or other persons who are, in the opinion of the Trustees, adequately qualified.

It has now been agreed that the funds available should be devoted primarily to the encouragement of research at the

post-qualification stage. With the development of the surveyor's profession, it is obviously desirable that research should be carried out into selected aspects of the profession, as covered by the Royal Charter. Whether by individuals or by groups of members, this research on programmes approved by the Trustees can only prove to be of benefit to the profession as a whole.

REVIEW OF EDUCATIONAL POLICY

The Council have received a report prepared by the discussion group leaders at the Annual Conference at Bangor. This report confirms that the Conference supported the recommendations contained in "The Review of Educational Policy" sent to all members with the June, 1960, issue of *The Chartered Surveyor*. Comments were made at the Bangor Conference on a few matters contained in this report, and these have been referred to a committee set up to prepare the detailed syllabuses for the new examinations. This committee is composed of the following members:

Messrs. H. W. Wells (*Chairman*), George Alexander and G. L. Burke (Fellows), Mr. D. H. Chapman (Professional Associate), Messrs. R. B. Caws, H. Brian Eve, E. N. Harris, D. P. Iggulden, L. B. Keeble (Fellows), Dr. E. A. Miskin (Professional Associate), Messrs. Rex Procter, J. Francis Smith, P. W. Trumper and O. F. Wooding (Fellows).

Professional Examinations**CAPE TOWN AND NATAL UNIVERSITIES, SOUTH AFRICA**

Recognition of Certificate in Quantity Surveying as exempting from Institution Examinations in the Quantity Surveying Section

Following upon the recognition granted by the Institution in 1952 to the Certificates in Quantity Surveying granted by the Universities of Pretoria and Witwatersrand, holders of the Certificates in Quantity Surveying granted by the Universities of Cape Town and Natal, South Africa, may be considered for election as Professional Associates without further examination on satisfying the Council that they are no longer pupils, that they have been for two years, and still are, engaged in professional work in a branch of the profession related to their degree course, namely, quantity surveying, and that they have received proper practical training in the profession.

This announcement supplements the recognition previously accorded to the Degree and Diplomas in Quantity Surveying granted by these four South African Universities to which earlier reference was made in *The Chartered Surveyor* for December, 1959, at page 279.

"QUANTITIES": USE OF NEW ZEALAND STANDARD SPECIFICATION

Candidates in New Zealand should note that permission has been granted for them to use in the subject of Quantities either the New Zealand Standard Specification (Methods of Measurement of Building Work) or the Standard Method of Measurement for Building Work.

The appropriate note to this effect will be included in the heading to the question papers in "Quantities" for 1961 and thereafter, and candidates must make it clear in their answer papers which Method they are using.

Malaya Branch: Proposed Formation of Malayan Institution of Surveyors

As a result of the Conference of Overseas Branches on 9th July, 1959, the Council approved the following as a statement of their policy:—

"1. Because of the Commonwealth status of The Royal Institution of Chartered Surveyors, the Council should do everything in its power to further the interests of the profession overseas.

2. In order to provide the organisation which overseas members require, the Institution should develop the policy of:—

(a) establishing and maintaining Branches overseas where they are viable;

(b) allowing Overseas Branches to develop their local features; and should further

(c) where a Commonwealth country becomes a separate nation, allow the Branch to develop into a separate but allied Institution at local option."

The Federation of Malaya has now become a separate

nation within the Commonwealth, and the Malaya Branch Committee, with the unanimous agreement of the Branch Annual General Meeting, have asked for the approval and support of the Council in the formation of a Malayan Institution of Surveyors which would be closely allied to the Institution.

At their meeting on 3rd October, 1960, the Council decided, subject to the views of all corporate members of the Federation of Malaya Branch, to authorise the Branch Committee to proceed with their proposals on the basis that the Society would maintain the existing professional standards of the Institution and that members of the Institution might join the society, subject to financial arrangements to be agreed between the Institution and the society.

Accordingly, on 30th November a Memorandum from the Branch Committee and a letter explaining the Council's proposals were issued to all the corporate members of the Branch, with a questionnaire which they were asked to complete and return to the Institution by 10th January, 1961.

Institution Notices

DISCIPLINARY ACTION

At a special meeting held on 5th December, 1960, the Council, acting in accordance with the powers conferred on them by Bye-law 22 (1), reprimanded Mr. Benjamin Foster (Fellow), of Birmingham, for a breach of Bye-law 21 (8) (a).

ANNUAL DINNER, 1961

The Annual Dinner of the Institution will be held at 7.0 for 7.30 p.m. on Tuesday, 7th March, 1961, at Grosvenor House, Park Lane, London, W.1.

An application form is enclosed with this issue of *The Chartered Surveyor*.

ROYAL AGRICULTURAL SHOW, 1961: CAMBRIDGE

Institution's Luncheon and Tea Tent

Arrangements are being made to provide a luncheon and tea tent, with a licensed bar for members and their friends visiting the Royal Show at Cambridge from 4th-7th July, 1961, inclusive.

Further details will be published in a forthcoming issue of *The Chartered Surveyor*.

INSTITUTION MEETINGS

The following meetings will be held at the Institution in January and February, 1961. The meetings will begin at 5.45 p.m. and light refreshments will be served from 5.0 p.m. It is hoped that copies of the papers will be available before the meeting.

Ordinary General Meeting, 2nd January, 1961

Mr. F. W. Delve, C.B.E., M.L.F.I.R.E., will speak on "Fire Precautions in Buildings" at the ordinary general meeting to be held on Monday, 2nd January, 1961.

Winter Agricultural Conference, 9th January, 1961

The Winter Agricultural Conference will be held at the Institution, from 11 a.m. onwards on Monday, 9th January, 1961. Details of the Conference are published on page 340 ante.

General Practice General Meeting, 23rd January, 1961

A general practice general meeting will be held on Monday, 23rd January, 1961. Mr. E. C. Uren, Director of the Laing Development Company, Limited, will speak on "Some Reflections on Property Development."

Ordinary General Meeting, 6th February, 1961

At the second ordinary general meeting of the year to be held on Monday, 6th February, 1961, Mr. T. A. Hamilton Baynes, M.A., F.C.A., will speak on "Share Valuations: Why and How?"

Institution Sport

RUGBY

The annual match between the Institution and the Chartered Auctioneers and Estate Agents Institute was played at the Richmond Athletic Ground on Wednesday, 9th November, 1960, with a resulting win for the Institution by 22 points to 9.

A dry ground and good playing condition resulted in a fast open game—one of the best for several years. The Institution quickly took the lead and were six points up within ten minutes by a try and a penalty goal. The Institution forwards then settled down, and with the three-quarters getting more of the ball they always looked dangerous.

Orthodox passing movements resulted in two tries and a goal, and the half-time score was 11 points to 6. After the interval two goals and a try were scored by the Institution.

The Institution fifteen was very ably led by John Vail of Richmond and the try scorers were Messrs. A. Stevens (two), R. Lowther, J. A. G. Fiddes, M. J. Parkin and K. Phillips. The two goals were kicked by M. Clapp.

FOOTBALL

A match against the College of Estate Management, postponed in October because of bad weather, has now been arranged for Wednesday, 25th January, 1961. It will be at Hinchley Wood and the kick-off is at 2.30 p.m.

Branch Notices

BRANCH MEETINGS

Bedfordshire and Hertfordshire Junior Branch.—Thursday, 19th January, 1961, at 7 p.m., at the Sun Hotel, Hitchin. Members of the Branch will speak on "The Role of a Quantity Surveyor and his Work."

Cambridgeshire, Huntingdonshire, Norfolk and Suffolk Branch.—Thursday, 19th January, 1961, at 11.30 a.m., at Owen Webb House, Gresham Road, Cambridge. A business meeting will be followed by lunch and a film and talk on the construction of the M.1. Motorway will be given by a representative of Messrs. John Laing, Limited. Following this a general meeting of the quantity surveyor members of the Branch will discuss the formation of a quantity surveyors section in the Branch.

Kent Junior Branch.—Wednesday, 18th January, 1961, at 6.30 for 7 p.m., at the White Hart Hotel, Bromley. The subject of the meeting is the physical aspect of planning. The Chairman and Honorary Secretary of the Junior Organisation will be present.

Sussex Branch.—Thursday, 12th January, at 1.0 p.m., at the Royal Pavilion Hotel, Brighton. Quantity Surveyors Section luncheon meeting to be attended by the President and Secretary of the Institution.

At 6.0 p.m. the Branch will hold a general meeting at the Hotel Metropole, Brighton, to be followed by a members dinner. Both functions will be attended by the President and the Secretary.

Sussex Junior Branch.—Wednesday, 18th January, at 6.30 p.m., at the Adelphi Hotel, Brighton. An address will be given on "The Changing Face of Brighton."

Warwickshire, Worcestershire and South Staffordshire Branch.—Thursday, 5th January, at 6.0 p.m., at Regent House, St. Philip's Place, Colmore Row, Birmingham. "Stocks and Shares," by Mr. J. Morris, a member of the Birmingham Stock Exchange. The meeting will be held in conjunction with the Junior Branch.

Yorkshire Branch.—Wednesday, 18th January, 1961, at 2.30 p.m., at the City Hall, Sheffield. Mr. A. B. Baldwin, M.I.C.E., will speak on "Sheffield's Water Supply Scheme from the Yorkshire River Derwent."

BRANCH REPORTS

Lancashire, Cheshire and Isle of Man Branch.—Many members of the Branch took the opportunity of meeting the President at a special general branch meeting which was held in the Old Rectory Club, 90, Deansgate, Manchester, on Wednesday, 26th October, 1960.

During an informal tea before the meeting the President was able to speak to most of the members.

The main business of the evening was an address by the President on Institution affairs, after which he undertook to answer some searching questions by members, who found the meeting of great benefit and demonstrated keen interest. Dinner after the meeting concluded a successful evening.

Hants, Dorset and South Wilts Branch.—The autumn Meeting of the Branch was held at the Civic Centre, Southampton, on 28th November, 1960. The meeting, attended by 210 members and guests, was presided over by the Branch Chairman (Mr. R. SAWYER) and was addressed

by Commander D. H. T. MACMILLAN, M.B.E., R.N.R. (Fellow), whose subject was "Charting the Seas." Com. MACMILLAN dealt with the work of the hydrographic surveyor from 2000 B.C. up to the present time and showed a film depicting charting areas of Southampton Water, using the most modern methods of the hydrographic surveyor.

At the conclusion Mr. SAWYER thanked Commander MACMILLAN and mentioned that the attendance was the largest at a Branch meeting for many years.

Kenya Branch.—The Annual Dinner of the Kenya Branch was held at the New Stanley Hotel, Nairobi, on 14th October, 1960, and was attended by 38 members and 75 guests. His Excellency the Governor, Sir PATRICK RENISON, was the principal guest. The loyal toast was proposed by the Chairman of the Branch, Mr. DOUGLAS DUNCAN (Fellow) and the principal speech and the toast of the Institution were given by Mr. W. F. COUTTS, C.M.G., M.B.E., to which the Branch Chairman replied. The toast to the guests was proposed by Mr. D. H. KYDD (Professional Associate), and replied to by Mr. R. J. HILLARD, C.M.G. In the unanimous opinion of members and guests, this was the most successful dinner for many years.

Singapore Branch.—Mr. W. M. BALCH, Past President, visited Singapore on the first weekend in October, 1960. To mark his visit the Chairman and Honorary Secretary of the Branch, Mr. M. H. SEAH (Fellow) and Mr. D. MORRIS (Professional Associate), organised a luncheon which was attended by 24 members and guests. The occasion proved to be very popular and members were very interested to exchange views with Mr. BALCH.

BRANCH OFFICERS AND COMMITTEES

Shropshire, Hereford and Mid-Wales Branch.—At the Annual General Meeting of the Branch the following Officers and Committee were elected for the Session 1960-61: *Chairman*, Mr. W. MINIFIE; *Vice-Chairman*, Mr. A. R. KIMBER (Fellow); *Honorary Secretary*, Mr. A. F. DABORN (Fellow); *Committee*, Messrs. A. V. DABORN, T. H. EVANS, W. M. HARRISON, H. F. HUDD, A. HUTCHISON, C. E. MOORE, J. F. MORRIS, F. G. NORTON-FAGGE, E. R. PULESTON JONES and T. WILSON WRIGHT (Fellows), and Messrs. J. ASHFORD, C. F. CHALKE, C. A. EADE, D. V. HARVEY, F. A. LODGE, R. G. H. NEWBIGGING, J. SMITH, J. TULLOCH, W. J. K. WILLIAMS and R. G. WILLIAMS (Professional Associates); *Junior Branch Representatives*, Messrs. A. CAUSER and C. G. THOMAS (Professional Associates).

Nottinghamshire, Lincolnshire and Derbyshire Branch.—At the Annual General Meeting of the Branch the following Officers and Committee were elected for the Session 1960-61: *Chairman*, Mr. C. J. PITHER; *Vice-Chairman*, Mr. R. G. DAVIES (Fellow); *Honorary Secretary*, Mr. J. G. DADY (Fellow); *Assistant Honorary Secretary*, Mr. C. WEBB (Fellow); *Treasurer*, Mr. L. FLETCHER (Professional Associate); *Member of Council*, Mr. W. A. EBBUTT; *Committee*, Messrs. R. C. YELLOU, T. D. HANSON, J. E. LEAK, R. W. G. DARD and E. W. MUGGLESTONE (Past Chairmen) (*ex-officio*); Mr. W. R. BRACKETT (Past President) (*ex-officio*); Messrs. F. W. A. BROGDEN, J. L. CROCKFORD, A. W. DODD, B. ELDER, G. R. GOODCHILD, A. W. LANE HALL, S. G. N. MITCHELL, H. G. PIGOTT, H. J. TURNER, L. H. WATSON and

C. WHITTON (Fellows) and Messrs. J. J. BENNETT, T. F. DAVENPORT, M. E. G. FELTON, A. C. SOUTHGATE and F. J. WEST (Professional Associates); *Junior Branch Representatives*, Messrs. J. E. HARLOW and J. P. KILLIPS (Professional Associates); *Benevolent Fund Steward*, Mr. T. D. HANSON; *Mining Representatives*, Messrs. R. HAYES and F. A. SHEPHERD (Professional Associates); *Quantity Surveyors Representatives*, Mr. J. SCOTT (Fellow) and Mr. M. E. G. FELTON; *Agricultural Representative*: Mr. R. COWLING (Professional Associate).

South Wales and Monmouthshire Branch.—At the Annual General Meeting of the Branch the following Officers and Committee were elected for the Session 1960-61: *Chairman*, Mr. S. P. H. ROGERS; *Vice-Chairman*, Mr. F. J. MATT (Fellow); *Honorary Secretary*, Mr. P. R. V. WATKINS (Professional Associate); *Member of Council*, Mr. GEORGE EDWARDS (Fellow); *Committee*, Messrs. E. R. RICHARDS, D. H. D. ALEXANDER, R. ASTLEY SAMUEL and H. J. W. PHILLIPS (Past Chairmen) (*ex-officio*); Messrs. T. JAMES, G. WYNDHAM BOWEN, C. N. BUNNING, E. J. A. COLLEY, L. W. DAVIES, G. F. EAST, D. M. R. FRANCIS, Lt.-Col. R. A. HOBBS, M. H. MAXWELL, C. T. PARKER, L. C. PATTERSON, G. W. SHELLARD, J. R. THOMAS, R. L. THOMPSON, T. R. TILL, J. O. WATKINS, T. J. WALKER, G. F. K. WHITE and HOWARD WILLIAMS (Fellows) and Messrs. A. U. CROFTS DAVIES, C. F. HENTON, H. J. HOWELLS, H. JELLINGS, E. R. NICHOLLS, J. E. H. REES and ROBERT THOMAS (Professional Associates); *Mining Representatives*, Mr. E. S. REES (Fellow) and Mr. E. JONES (Professional Associate); *Junior Branch Representatives*, Mr. DEREK M. WILLIAMS (Fellow) and Mr. MICHAEL CROSS (Professional Associate).

Cumberland and Westmorland Branch.—At the Annual General Meeting of the Branch the following Officers and

Committee were elected for the Session 1960-61: *Chairman*, Mr. C. H. D. ACLAND; *Vice-Chairman*, Mr. J. TELFORD HART (Fellow); *Honorary Secretary*, Mr. J. WATSON (Professional Associate); *Committee*, Messrs. L. S. HOGGARTH, P. F. KEELING, O. R. BAGOT, A. G. HOLLIDAY, R. SMALLEY, I. C. MCWILLIAM, F. BIRKBECK, and F. E. HARGREAVES (Fellows) and Messrs. J. C. BAILY, A. L. HUTCHINSON and J. D. THORNBORROW (Professional Associates); *Agricultural Representative*, Mr. O. R. BAGOT (Fellow); *Benevolent Fund Stewards*, Messrs. A. G. HOLLIDAY and J. TELFORD HART (Fellows); *Schools Liaison Member*, Mr. A. L. HUTCHINSON (Professional Associate).

Devon and Cornwall Branch.—At the Annual General Meeting of the Branch the following Officers and Committee were elected for the Session 1960-61: *Chairman*, Mr. B. W. METCALF; *Vice-Chairman*, Mr. A. J. CULLEY (Fellow); *Honorary Secretary*, Mr. L. A. N. WHITELL (Professional Associate), A.A.I.; *Member of Council*, Mr. J. FRANCIS SMITH; *Committee*, Messrs. W. H. RUMBELOW, B. R. CONEY, J. B. STANIER and P. J. PAUL (Past Chairmen) (*ex-officio*); Messrs. E. G. BROWNE, J. DENYS DREW, W. M. FINNIE, A. HAUGHTON, A. MORGAN, R. F. N. SILVERLOCK, G. L. SWEET, C. G. WARD and FRANK WARD (Fellows) and Messrs. F. J. BAWDEN, R. R. SMITH and D. W. RANDALL VINING (Professional Associates); *Junior Branch Representatives*, Messrs. S. H. KENNEDY and D. G. MINAS (Professional Associates); *Past Presidents*, Messrs. F. G. FLEURY and R. W. TRUMPER; *Members of Standing Committees*, Messrs. D. T. F. MUNSEY, F. E. TAVENER and P. F. WILLIAMS (Fellows); *Honorary Secretaries of Sections*, Mr. T. LUMBY (Fellow) (Cornwall); Mr. P. J. SMERDON (Fellow) (quantity surveyors); Mr. H. S. WILLIAMS (Professional Associate) (agriculture); *Honorary Auditor*, Mr. E. S. JUBB (Fellow).

Personal Announcements

Following the death of Mr. R. S. BARLEY, senior partner of Messrs. FLEURET HAXELL, MARKS AND BARLEY, of 22, Bloomsbury Square, London, W.C.1, the practice is being continued by Mr. J. F. M. KING (Fellow), F.A.I., and Mr. W. H. SHOARD, under the style of Messrs. FLEURET, HAXELL, KING AND SHOARD. The address of the firm will remain the same.

Messrs. BORRETT AND BORRETT, of 199, Piccadilly, London, W.1, have taken into partnership Mr. PETER FRANK JONES, B.A. (Cantab.), (Professional Associate), A.A.I., who has been a member of their staff for some years. The style and address of the firm remain unchanged.

Messrs. BRACKETT AND SONS, of 27/29, High Street, Tunbridge Wells, have taken into partnership Mr. JOHN GEORGE HINDLEY (Professional Associate). The style and address of the firm remain unchanged.

Mr. R. C. A. DAVIES (Professional Associate), A.A.I., and Mr. JAMES BERESFORD CALVER (Professional Associate) have been taken into partnership by Messrs. NEWELL AND HAMLYN, of 487, New Cross Road, London, S.E.14. The style of the firm will remain the same.

Mr. ALAN W. DAVSON, O.B.E. (Fellow) has retired from the firms of Messrs. DAVSON AND PRICHARD, London, and Messrs. DAVSON AND WARD (Head Office), Nairobi, Kenya, as from 31st December, 1960. He will continue his association with these firms as a consultant. The style of both firms and the address of the Nairobi firm remain the same.

The address of Messrs. DAVSON AND PRICHARD will be 147, Victoria Street, London, S.W.1.

Mr. W. M. FINNIE (Fellow), F.L.A.S., has relinquished his partnership in Messrs. CLUTTON AND DREW, surveyors, land agents and valuers, of 14, The Close, Exeter, as from 31st December, 1960. Mr. PETER W. TRUMPER (Fellow), F.L.A.S., and Mr. P. R. PEARCE (Professional Associate) have become partners in the firm. The firm will continue to practise under the same name and at the same address. Mr. FINNIE will manage the Devon, Cornwall and Dorset estates of the Trustees of the Bedford Estates and the Canonteign Estate of the Trustees of Viscount Exmouth. His address will be The Bedford Office, Tavistock.

Mr. MAURICE FULLER (Fellow), A.M.T.P.I., has resigned his appointment as Assistant County Planning Officer for the North-West Division of Kent with effect from 1st January, 1961, and has commenced in private practice as a planning consultant and adviser in urban redevelopment. His present address is 20, Parrock Avenue, Gravesend. (Gravesend 1588.)

Mr. GORDON C. HALL (Professional Associate), chartered quantity surveyor, of Victoria Chambers, 14, Figtree Lane, Sheffield, 1, has taken into partnership Mr. G. GORDON POWELL (Professional Associate). The firm will practise under the name of Messrs. GORDON HALL AND POWELL and the address remains the same.

Mr. F. C. HORSLEY (Fellow), a partner in the firm of Messrs. ALLSEBROOK AND WOOD, of 16, Charlotte Street, Bristol, 1,

will continue to practise as sole principal on the retirement of Mr. L. R. ALLSEBROOK and Mr. C. F. WOOD. The style and address of the firm remain unchanged.

The partnership between Messrs. J. T. JONES and R. J. DALLOW (Professional Associates), practising as Messrs. DALLOW AND JONES, at Oak Buildings, Kent Road, Birmingham, 32, has been dissolved by mutual consent as from 30th September, 1960. Mr. J. T. JONES (Professional Associate) has recommenced practice under the style of JOHN T. JONES, chartered quantity surveyor, at Central Buildings, Hagley Street, Halesowen, Birmingham.

Messrs. LACY SCOTT AND SONS, of 3, Hatter Street, Bury St. Edmunds, have taken into partnership from 1st January, 1961, Mr. CECIL NEIL STADDON, M.A., F.A.I., who has been with the firm for the past 12 years. The style of the firm remains unchanged.

Messrs. DEREK R. MCGILL AND COMPANY, of 26, Broad Quay, The Centre, Bristol, 1, have opened a new office at 22, Upper Maudlin Street, Bristol, 2.

Following the retirement of Mr. K. N. MORHAM (Fellow) the firm of Messrs. MORHAM AND BROTHIE, 29, Hanover Street, Edinburgh, 2, will be carried on by Messrs. WILLIAM A. B. BROWN and DAVID MOFFAT (Fellows) under the present style.

Mr. F. R. MORRISON (Fellow) has terminated his employment with the Valuation Office, Inland Revenue, and has commenced in private practice as surveyor and valuer, at 144, Lower Baggot Street, Dublin, Eire.

Mr. D. J. SHEPHERD and Mr. V. J. CROCKER (Professional Associates) have entered into partnership and are practising under the style of Messrs. CROCKER AND SHEPHERD, chartered quantity surveyors, from 8, Brunswick Place, Leeds, 2. (Leeds 24555.)

Mr. G. D. STEWART (Professional Associate) and Mr. ROBERT T. HODGSON, A.R.I.B.A., have entered into partnership as from 1st November, 1960. They will practise under the style of Messrs. STEWART AND HODGSON, architects and

surveyors, 66, Albion Street, Cheltenham. (Cheltenham 4408.)

Mr. REGINALD E. SYMONDS (Fellow), F.A.I., of Messrs. TAYLOR AND MELHUIS, 4/6, Station Road, New Barnet, Herts, has retired from the partnership with effect from 30th September, 1960. He will continue to act in a consultative capacity. The business is being carried on under its present style by the remaining partners, Mr. J. RICHARDS, F.A.I., and Mr. J. K. ADDENBROOKE (Fellow), F.A.I.

Mr. B. F. TITE has resigned from the partnership of Messrs. TITE AND CAWTE, 6, Rockstone Place, Southampton, as from 31st December, 1960, to take up an appointment with a firm of building contractors. The practice will be carried on under the same style by Mr. E. V. CAWTE (Professional Associate) as sole principal, at the same address. (Southampton 25641.)

Following the death of Mr. J. E. J. TOOLE (Fellow), F.A.I., Mr. WILLIAM G. WEBB (Fellow) has been appointed Valuer to the London County Council. Mr. WEBB has been with the Council for many years and was formerly Deputy Valuer.

Messrs. DANIEL WATNEY, EILOART, INMAN AND NUNN, of The Charterhouse, Charterhouse Square, London, E.C.1, have taken into partnership Mr. G. D. NUNN (Professional Associate) as from 1st January, 1961.

Messrs. YOUNG AND YOUNG have closed their office at 2, High Street, Chipping Sodbury, Gloucestershire, following the incorporation of the firm with Messrs. HOWES, LUCE, WILLIAMS AND PANES. Mr. GEO. H. YOUNG (Fellow), F.A.I., is continuing the practice under the style of Messrs. HOWES, LUCE, WILLIAMS AND PANES (incorporating Messrs. YOUNG AND YOUNG) at Albion Chambers, Small Street, Bristol, 1 (Bristol 23470). Mr. ROBERT S. YOUNG (Fellow), F.A.I., has relinquished his partnership on joining the Inland Revenue Valuation Office.

Corrigendum: The name of Mr. JOHN MONKMAN (Professional Associate) was mis-spelt in the December notice of Mr. MONKMAN's appointment with Messrs. COURTAULDS, LIMITED.

Examiners' Reports

The following extracts are from reports by the examiners for the Final and Direct Membership and Land Surveying Section. The examiners' original reports are filed at the Institution and may be seen in the Library by arrangement by any properly authorised representative of a teaching establishment who may wish to consult them. Other reports were published in the December issue.

FINAL EXAMINATION ONLY

Estate Finances and Business Management

Candidates would do better if they took more time to read the questions thoroughly and marshal their facts before starting to write.

Report Writing (Agriculture and Land Agency)

Criticism falls generally into two broad categories:—

(1) Failure to give all the advice requested by the client, indicating a failure to read and re-read the question before attempting to answer.

(2) Although the majority of candidates attempted to produce a topical report with appropriate sub-headings and appendices, the overall impression gained was a real lack of practical experience in writing a report on an agricultural estate.

Law of Local Government and Public Health

In question 6 many candidates failed to state clearly the action which they would advise Smith to take, but merely stated the actions available.

Report Writing (Valuation and Housing Management)

There was a definite improvement in the standard of answers this year. Candidates are reminded, however, that while they are required to make a large number of assumptions, they must accept the facts given to them in the question.

Measurement of Builders' Work (I)

With only two candidates it is difficult to give a general criticism as one was fairly good and the other poor.

Professional Practice and Procedure (Building Section)

A great many were far too verbose, which not only took up valuable time but created opportunities for errors on points not arising from the question.

Measurement of Builders' Work (II)

The general standard of work was slightly better this year, but the presentation of papers indicates lack of experience by a large number of candidates. Much of the work was disorderly and cramped.

I think it would be helpful to some if they were to ask a builder to take them through the routine in their office and on one or two sites.

Development of Building Estates

Most candidates appear to be able to get to grips with this subject and to give a reasonably good account of their knowledge of it.

Report Writing (Building and Quantities Sections)

The work of the majority of candidates in this subject was poor in the extreme; candidates overlook or ignore the importance of the report from the clients' point of view, extending themselves on conditions which are too obvious for words, yet denying the client professional knowledge and understanding of the significance of those conditions or of the best methods of dealing with them.

Professional Practice and Procedure (Quantities)

Those candidates who fail very often do so because they have had insufficient practice in setting down in writing in their own words their thoughts and opinions on the various matters about which questions are asked. When preparing for this examination, candidates should not be content to read only about the subject but should practice making written answers to hypothetical questions or questions set in previous years.

Building Materials and Builders' Plant

British standards were not known sufficiently thoroughly. Candidates showed ignorance of the modern types of concrete.

Building Construction (III) (Non-Typical) (1st paper)

The principles of triangulation of trusses in particular relation to the loads to be carried showed lack of preparation and study. Detailing of carpentry and joinery requires considerably greater study. The percentage of area method of calculation of reinforced concrete could not be translated into actual reinforcement areas. Graphical set-outs for distribution of loads on to soil do not seem to have received attention.

Candidates still persist in omitting their pass numbers and the question numbers from the drawings.

Building Construction (III) (Non-Typical) (2nd paper)

The fundamentals of construction seemed to be beyond the comprehension of a large number of candidates, and security of structure found no adequate answers.

Candidates still persist in omitting their pass numbers and the question numbers from the drawings.

DIRECT MEMBERSHIP EXAMINATION

Law of Property (III)

Candidates showed a good general knowledge of the subject, but appear to have overlooked the effect of recent legislation: this was shown by ignorance in many cases of Rent Act 1957, section 16 (4 weeks' notice to quit) and section 14 (i) (requirement of loan = requirement of premium) and the Landlord and Tenant (Temporary Provisions) Act, 1958.

National and Local Taxation (Agriculture and Land Agency)

Insufficient number of candidates for any valid generalisation.

Valuation (Elementary)

The number of candidates was too small to enable the examiner to give any general criticism of candidates' work suitable for inclusion in general reports.

Town and Country Planning (Law and Procedure)

The papers were of average merit, and insufficient in number to justify any general conclusions.

Building Construction (II)

Generally the paper was a little better answered than the previous year, indicating that more attention had been paid to adequate preparation for the examination. Nevertheless, there is still room for much improvement. General presentation, sketches and drawings were reasonable, an improvement on the previous year.

Law of Property (II)

With only five candidates, it is difficult to make any general report. Two of the three candidates who attempted question 3, confused the acquisition of easements by an implied grant with acquisition by presumed grant. Three of the candidates who attempted question 5 did not seem to appreciate that an oral contract for the sale of land can be enforced without there being an act of part performance. Four of the candidates, in answering question 8, gave the impression that particulars of sale were only required in sales by auction.

Drainage and Sanitation (Valuations)

Sketches generally were poor and lacking in detail.

Urban Estate Records and Accounts

It is impossible to give a general criticism from only five scripts.

Management (History and Principles)

Useful evidence of a greater knowledge of Central Housing Advisory Committee and other official publications.

Town and Country Planning (History and Principles)

It is hardly possible to make valid generalisations on the strength of three scripts! Of the three, one candidate knew his subject thoroughly, clearly and intimately, and expressed himself well. The other two did not display enough knowledge to merit a passmark, though they were not in the hopeless category.

Economics (II)

The small number of candidates sitting this examination does not permit any useful generalisation.

Building Contracts

The general standard was perhaps a little better than last year. Candidates who failed did so through a very obvious lack of preparation.

London Building Acts and Building Bye-laws

The average mark was low. Answers showed a general lack of knowledge of the main principles and absence of serious study.

Most candidates who attempted question 1 confused prescribed distance with general line of buildings.

Drainage and Sanitation (Building and Quantities)

Several candidates showed a lack of knowledge of drainage calculations and also of methods employed for raising sewage from a lower to a higher level.

Building Construction (III)

The answers were of the usual low standard, and generally showed a lack of preparation.

Professional Practice and Procedure (Quantities)

Most candidates made a good attempt at this subject. Perhaps more could be done to acquire the facility of setting down the answers to questions in clear, unambiguous English. This ability is essential when writing specifications, reports and bills of quantities if misunderstandings and claims from contractors are to be kept to a minimum.

Report Writing and Specifications

Report writing was extremely poor for reasons quoted elsewhere; specification writing was reasonably good.

LAND SURVEYING SECTION : SPRING, 1960, EXAMINATIONS

FIRST EXAMINATION

Map Reading

Candidates showed poor knowledge of the correct relationships between grid, true and magnetic bearings. They were also weak in scaling off distances correctly from the map.

Mathematics (Applied)

Far too many candidates seemed to regard solving problems in applied mathematics as being merely memorising a number of formulae and substituting in these certain given data. A real understanding of the principles of the subject is vital.

The candidate should write down how a certain equation is obtained, e.g., if taking moments of forces, he should say so, and also state the axis about which the moments are taken. The candidate should also be particularly careful about stating units involved.

Mathematics (Pure)

More careful analysing of the question is required. There were many careless errors. More preparation in calculus is required, with particular care to its meaning. Candidates too often seemed to have learned both differentiation and integration by rule of thumb methods, without any real understanding of what they were doing.

Plotting and Fair Drawing

Lettering is generally poor and more thought should be given to lay-out. All stations, main and detail lines should be inked in with black ink.

Physics or Physics and Chemistry

The standard was higher than in recent years, with a big improvement in knowledge of standard book-work. The overseas students seem to have followed a set course of study in most cases, and their standard was probably higher than that of students in this country.

Chain Surveying and Levelling

The standard of examination papers was much lower than in 1958 and 1959.

INTERMEDIATE EXAMINATION

Large Scale and Engineering Surveying

Many marks were lost by candidates who did not read the questions carefully, and included much possibly correct but entirely irrelevant information. One candidate concluded a page of irrelevancy with the words "This does not perhaps come within the scope of the question."

Computations

The general standard was high and computations were generally well and concisely set out. The worst error, committed only by a minority, was to mean two widely discordant results for the quantity sought (e.g., two independently obtained values of the E. or N. co-ordinate of C in question 1), when it should have been obvious that one of the results was wrong due to an error in computing.

Topographic Surveying, Part 1

Some overseas candidates submitted extremely poor answers to question 1. The corrections for curvature and refraction were applied with the wrong algebraic sign, and in some cases they were applied in fact to a computed height

difference, instead of in seconds of arc to an observed angle. In some cases answers to questions 1 and 3 were poorly presented and there were many careless errors in arithmetic.

Topographic Surveying, Part 2

Answers to the question on the practical application of photogrammetric methods were very poor.

Land Registration

Questions should be read carefully and answers confined strictly to the question.

Geodesy and Field Astronomy

Candidates generally showed a much better knowledge of field astronomy than of geodesy. Some of the answers to questions 5 and 6 were excellent. There were a number of poor answers to questions 1 and 2. Many candidates seemed to think that the only difference between primary and third order levelling consisted in having fore-sights equal to back-sights. Some had very rudimentary ideas about reconnaissance.

Plane Table Survey

Attention is drawn to the requirements laid down in the syllabus. In some cases computations of clinometer heights were not submitted; grid on graticule lines were not numbered; many documents were not signed by the candidate. There was a common tendency to extend the contouring beyond the area covered by spot-heights, to the detriment of accuracy. It is laid down that fixing of trig. control is not a part of the plane-table survey, and its computation record is not required.

FINAL EXAMINATION

Land Surveying for Cadastral and Engineering Purposes Part 1 Branch 1

Only two candidates appeared to know anything about mass haul curves, i.e., question 2. Otherwise the answers were satisfactory.

Land Registration, Branch I and IV

More attention must be given to the study of legal definition. Questions should be carefully read before being attempted.

Topographic Surveying, Part 2, Branch 2

Only two scripts gave insufficient information.

Cadastral Branch 4

Candidates tended to write round the question. In question 6 and 7 their knowledge was exhibited merely by implication.

Law of Property Branch 4

With only three candidates it is difficult to give any general report.

Hydrographic Surveying Paper B

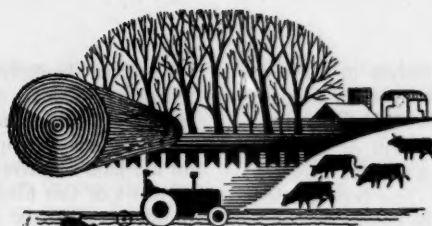
With the wide field to be covered in oceanographic work, it is essential for candidates to obtain information on the instruments to be used, when experience with them is limited.

Valuation (Elementary) Branch 4

Candidates who do not answer the questions which the examiner has set are guilty of wasting the examiner's and their own time. They must expect to be condemned accordingly.

Hydrographic Surveying Paper "A"

This was the first time that this final examination in the hydrographic section has been taken and the candidates probably did not know what they were in for. One can form no reliable opinion of standard on two candidates and on one paper only, but it would certainly appear, from this meagre evidence, that neither had prepared very thoroughly for the examination.



AGRICULTURE AND FORESTRY

Reimbursement of Limited Owners

By D. R. DENMAN, M.A., M.Sc., Ph.D. (Fellow), and B. R. HOWE, LL.B.

This article, which is the third in a series of three, contains observations on the power of the limited owner to charge the trust land. The first two articles in the series were published in the May and August, 1960, issues of The Chartered Surveyor.

The first of this series of three articles, on the manner in which limited owners under trust arrangements who finance the improvement of land for the benefit of remaindermen can receive from the trust funds reimbursement of their expenditures, explained that a limited owner might:

1. be repaid from trust funds directly where he had done the work himself; or
2. be reimbursed from trust funds for compensation paid to contractual tenants for improvements made by them; or
3. charge the trust land with expenditures incurred by himself or by way of compensation to contractual tenants.

The first article went on to consider in some detail the first of these alternatives, and the next in the series dealt with the second alternative. It remains for this article to complete the picture with some observations on the power of the limited owner to charge the trust land.

A RESTRICTED PRIVILEGE

A general power to mortgage the trust land, exercisable by the trustees or the tenant for life of a settlement, for the benefit of the trust and its beneficiaries is available, subject to certain safeguards and restraints, to trustees and tenants for life as a concomitant of the general powers of alienation authorised by the Settled Land Act, 1925, and the Law of Property Act, 1925. We are not here concerned with these general powers of mortgaging. We would note in passing, however, that trustees can exercise these powers to raise cash to meet a request from a tenant for life or life beneficiary for reimbursement from trust funds of the cost of improvements or repairs in certain circumstances paid for by the limited owners out of their free monies.

The focus of this article is upon the right to encumber trust land by charges raised to defray specific expenditure on improvements to the land. Neither trustees nor beneficiaries have a general right to impose a charge for these purposes. Admittedly, in a particular instance the trust deed may empower trustees or the tenant for life to act in this way. Apart from this exception, the privilege of raising specific charges is a creation of statute law of very narrow proportions. The privilege is exercisable only in respect of let agricultural holdings where the landlord, by some process of law, has had to incur expenditure on or in connection with the improvement, repair or management of the land.

DIRECT EXPENDITURE BY THE LANDLORD

Under the Agricultural Holdings Acts a landlord may find himself confronted by a tenant who wishes to make an improvement of a kind which he would prefer to do himself, although, but for the tenant's intervention, he would not have taken action. Expenditure incurred by the landlord in these circumstances gives him *prima facie* cause and right to seek to charge the land with the expenditure.

There are two occasions under the provisions of the Acts when these circumstances may occur. The Agricultural Holdings Act, 1923,⁽¹⁾ gave a tenant the right to claim compensation from his landlord for drainage work carried out. No previous consent was required but the tenant had to notify the landlord of his intentions. The landlord on receipt of the tenant's notice could elect to execute the work himself. Under the Agricultural Holdings Act, 1948,⁽²⁾ and the Agriculture Act, 1958,⁽³⁾ the Agricultural Land Tribunal may approve the execution of an improvement by a tenant when the tenant appeals to the Tribunal against the refusal of the landlord to consent to the work. The Tribunal informs the landlord of its approval and the landlord, then, has a prescribed period in which he may propose in writing to do the work himself.

When a landlord bears the cost of making an improvement in these circumstances, he is entitled⁽⁴⁾ to obtain from the Minister of Agriculture, Fisheries and Food an order charging the holding, or any part of it, with repayment of the cost of the improvement. The landlord may not charge the land himself with the encumbrance; he must seek the order of the Minister. Note, also, that the Minister's power to grant the charging order is not an unqualified prerogative. He may only do so when the improvement is drainage work started before 1st March, 1948, or an improvement started on or after that date within the list of improvements which comprise Part II of the 3rd Schedule of the Agricultural Holdings Act, 1948—i.e. durable improvements of a general, not specialised character, likely to fit into average farming requirements.

The statutes which empower the landlord in this way do not discriminate between landlord and landlord. All landlords have the privilege. Normally an absolute owner in receipt of the rents and profits of the land would find little benefit in the charging device. Not so the limited owner who is the tenant for life under a trust settlement⁽⁵⁾. By

charging the trust land he creates an interest in his own favour out of the corpus of the trust and has no need to approach the trustees for cash reimbursement.

Only a tenant for life of a trinal settlement or a triple-function settlement or life beneficiary of a volitive trust for sale, may so charge the trust land, because these beneficiaries, alone among beneficiaries as a class, can be landlords within the requirements of the Agricultural Holdings Acts. Nevertheless, the trustees of a Bostonian settlement⁽⁶⁾ and of a normal trust for sale, indeed all trustees who are in receipt of the rents and profits of the trust land, can charge the land under the Agricultural Holdings Acts because, unlike the beneficiaries to whom their fiduciary care extends, they may be landlords. Circumstances may arise in which it would be more expedient for trustees to charge the trust land with the improvement expenditure, and raise money by assigning the charge to one of the conventional lending corporations⁽⁷⁾ than to realise trust securities.

In Scotland, the Agricultural Holdings (Scotland) Act, 1949, runs parallel, in principle, with the English statutes. The Secretary of State for Scotland may make a charging order⁽⁸⁾ in favour of the landlord to cover the cost of improvements made by the landlord to an agricultural holding. The parallel with the English law is not perfect in all respects. A landlord who is an absolute owner of the land cannot avail himself of the charging order privilege. Again, the charging order, when made, always charges the land with a repayment annuity; in England the total sum may be charged with no provision for regular repayment by way of an annuity. Another difference north of the Border is in the width of the provisions. A charging order can be sought for the repayment of the cost of any improvement in the first, second and third schedules of the 1949 Act, providing the tenant had previously proposed its execution.

The most recent piece of agricultural legislation, the Agriculture Act, 1958, contains provisions which in their application can create circumstances for the landlord similar in principle to those just mentioned. An application by a tenant to the Agricultural Land Tribunal⁽⁹⁾ may start a chain of events the last link of which imposes upon the landlord a contractual obligation to make a specified improvement or improvements. If the landlord defaults, the tenant has his contractual remedies, a right to execute the work himself and to recover the cost from the landlord. For some reason, deliberate or inadvertent, the new legislation does not follow the Agricultural Holdings Acts. A landlord who has been obliged to incur expenditure on improvements under the force of the new Act is not allowed to seek a charging order and transfer to the land the burden of the expenditure. The omission is curious and creates what may well be an inequitable inconsistency in the law.

Once a charge has been imposed upon the trust land, a tenant for life under a trinal settlement can direct the trustees to redeem the charge either from trust funds or from monies raised by mortgage of the trust property⁽¹⁰⁾. Thus the limited owner, in these circumstances, is reimbursed for his outlay. No question of repaying the trust money out of income can arise. For one thing, the trust money is used to redeem a charge, and for another the charge is raised to meet the cost of improvements which trustees are empowered to finance from trust capital without requiring repayment from income.

A tenant for life under a Bostonian settlement and a life beneficiary under a normal trust for sale have no managerial powers over the trust land and therefore are not in a position

to become landlords in a contractual relationship with tenants. There is, therefore, little chance of their making expenditures from free monies to meet the cost of improvements originally proposed by tenants, and of raising charges on the land to defray the outlay. If, however, the trustees of trusts of this kind raise charges, as they are empowered to do, to defray the cost of tenant-sponsored improvements, the tenant for life or life beneficiary will have to bear the deduction from income of the interest on these charges, should they be assigned to extra-trust creditors. And if the charge is repayable in instalments, the trust income will have to suffer the deduction of the instalments as well.⁽¹¹⁾ In Scotland the trustees of an improper life rent who raise a charge of this kind on the land will probably simultaneously burden the trust income of the beneficiary with repayment instalments as well as interest, because all charges in Scotland are repayable in instalments.

Life beneficiaries of a binary and volitive trust for sale are in positions in all respects similar to the managerial position of the tenant for life of a trinal settlement.

EXPENDITURE ON TENANT'S COMPENSATION

A landlord's statutory or other legal obligation to compensate a tenant of an agricultural holding for improvements and items of tenant-right is a further process of law which imposes upon the landlord an involuntary expenditure. The Agricultural Holdings Act, 1948,⁽¹²⁾ comes to the aid of the landlord and gives him statutory sanction to obtain from the Minister of Agriculture, Fisheries and Food an order charging the holding with the repayment of compensation paid to a tenant in respect of what, under the 1948 Act, are called old and new improvements and of those items of tenant-right which the Act sets out in its fourth schedule.

These provisions apply to all landlords whether absolute or limited owners. It is required, however, when the landlord is not an absolute owner, that no repayment instalment or interest on the principal sum charged shall be payable beyond the useful life of the improvement for which the compensation had been paid.⁽¹³⁾ If the amount of compensation cannot be agreed and the dispute goes to arbitration the arbitrator can be requested to certify⁽¹⁴⁾ the term for which the charge may continue, having regard to the foreseeable useful life of the improvement. Land held in any one of the forms of trusts designated in these series of articles is in this way protected from continuing charges raised by tenants for life or beneficiaries.

The privilege of a charging order to defray the cost of tenant's compensation has a direct bearing upon the question, discussed in the second of these articles, of repayment from trust monies of compensation paid to tenants from the free monies of tenants for life and life beneficiaries. The article contended that trustees of a trinal settlement, of a triple-function settlement and of binary and volitive trusts for sale can be required to reimburse from trust funds a tenant for life or life beneficiary who has compensated his contractual tenant for making improvements upon which trustees are empowered to expand trust money. The law, it was admitted, was not unequivocal or comprehensive. Reference was made to Mr. Scammell's⁽¹⁵⁾ contrary opinion. Limitation of the trustees' powers to improvements proper and the inability of trustees to reimburse compensation payments for those items of tenant-right which comprise Part II of the fourth schedule of the 1948 Act were also mentioned. These uncertainties and limitations can, however, be circumvented by the device of a charging order. A tenant for life who compensates a contractual tenant for improvements and other

items of tenant-right can obtain a charging order from the Minister of Agriculture, Fisheries and Food, and subsequently instruct the trustees to redeem the charge from trust funds. In this way the limited owner is reimbursed from trust funds for the compensation he has paid. No uncertainty attaches to the procedure and it reaches further than the process of direct reimbursement from trust funds of compensation payments.

When granting an order charging the holding with payment the Minister may require repayment, by annual instalments,⁽¹⁶⁾ of the sum charged. When this happens and the land is under a trust for sale or Bostonian settlement the trust income will be inevitably burdened with the obligation of meeting the instalments. For this reason, the Minister is not likely to require a repayment by instalments of a charge raised to defray compensation for improvements of a durable kind. To do so would be tantamount to requiring the life beneficiary to meet the cost of the improvements out of income, an arrangement made invalid under the Agricultural Holdings Act, 1948. Repayment by instalments, however, may well be required where the charge is raised to meet compensation for items of tenant-right other than improvements of a durable kind.

In Scotland the law is more obscure. Clearly a life-renter of a proper life-rent and the trustees of an improper life-rent can obtain a charging order from the Secretary of State encumbering the holding with repayment of compensation paid to a contractual tenant by the life-renter or the trustees.⁽¹⁷⁾ What is not clear are the powers (if any) of the life-renter or trustees to redeem the principal of the charge in every case from the corpus of the life-rent property or of the trust fund, as the case may be. If the life-renter of an improper life-rent is empowered to redeem a charge on the land from the corpus of the life-rent property it would open the way to a means of reimbursement, from the fiar's interest, of compensation paid out of free monies by the life-renter.

CHARGING ORDER BEFORE PAYMENT

The charging orders so far considered are obtained from the Minister of Agriculture, Fisheries and Food or from the Secretary of State for Scotland after the event; that is to say, after money has been paid out in compensation to a tenant or in meeting entirely or in part, the cost of an improvement. Special provisions are granted to the trustees of a Bostonian settlement and normal trust for sale and probably also to the trustees of a volitive trust for sale. They are entitled to obtain before payment is actually made⁽¹⁸⁾ an order charging the holding with repayment of compensation payable to a contractual tenant. Compensation payable to

a tenant is not the only outlay trustees can cover by a charge in this way. Under the special umbrella may be brought "any sum awarded under the Act (1948) to be paid by the landlord." What this means is not quite clear. Presumably it would go as far as section 6 of the Agricultural Holdings Act, 1948, and include repayments for which an award under that section makes a landlord liable. If it were so, the trustees could subsequently redeem the charge, as they have power to do, out of trust funds and thereby meet the cost of repairs from capital monies without resorting to the Northumberland case expedient. No similar provision has been made in Scotland. In that country payment of compensation or the cost of an improvement is a condition upon which the right to raise a charging order is contingent.

A CHARGE ON THE HOLDING

The charges raised by the Minister of Agriculture, Fisheries and Food, and the Secretary of State for Scotland in respect of compensation or cost of undertaking tenant-sponsored improvements and (under the English Act) sums awarded to be paid by the landlord are invariably charges upon the holding. They are not charges upon the whole expanse of the trust land and *a fortiori* upon the whole corpus of the trust. The point has little significance when the amounts involved are small. The special nature of the charge, confined as it is to the holding, is a matter of serious import, when the holding is one of low value and the sum charged is proportionately large. Being charged only against a particular holding and not against the corpus of the trust, its security and guarantee of redemption are limited to the marketable value of the holding. The fixation of the charge upon a particular holding, however, does not prevent the trustees raising a mortgage under their general powers by pledging the whole or part of the trust capital, in land or chattels, and so to redeem the charge.

REFERENCES

- (1) Section 3 of the Agricultural Holdings Act, 1923.
- (2) Section 50 (2) and (3), Agricultural Holdings Act, 1948.
- (3) First schedule, paragraph 14, Agriculture Act, 1958.
- (4) Section 82 (1) (b), Agricultural Holdings Act, 1948.
- (5) cf. *The Chartered Surveyor* for May, 1960, page 589.
- (6) cf. ditto.
- (7) Section 83 (6), Agricultural Holdings Act, 1948.
- (8) Section 82 (1) Agricultural Holdings (Scotland) Act, 1949.
- (9) Section 4, Agriculture Act, 1958.
- (10) Section 75 (1) (2) and section 75 (2), Settled Land Act, 1925.
- (11) Section 102 (3), Settled Land Act, 1925.
- (12) Section 82 (1) (a), Agricultural Holdings Act, 1948.
- (13) Section 83 (3) (a), Agricultural Holdings Act, 1948.
- (14) Section 82 (1), Agricultural Holdings Act, 1948.
- (15) The Mr. Scammell cited is not, as the previous article indicated, the Mr. Scammell who is an Associate of the Institution, but another leading authority of the same name. The mistaken identity is regretted.
- (16) Section 83 (2), Agricultural Holdings Act, 1948.
- (17) Section 82, Agricultural Holdings (Scotland) Act, 1949.
- (18) Section 82 (2), Agricultural Holdings Act, 1948.

Announcements and Publications

STATUTORY INSTRUMENTS

The Tuberculosis (England and Wales Attested Area) Order, 1960 (S.I. 1960, No. 1708, 3d. net) declares the whole of England, subject to certain minor exceptions, an attested area.

The Tuberculosis (Compensation) Amendment Order, 1960 (S.I. 1960, No. 1714, 3d. net) which came into operation on the 1st October, 1960, amends the Tuberculosis (Compensation) Order, 1950, by altering the scale of compensation for bovine animals slaughtered under the powers of section 17 of the Diseases of Animals Act, 1950. The maximum compensation payable for a reactor is increased from £100 to £120 and the compensation payable for an animal that has been in contact with a reactor is increased to the full market value without any maximum.

AGRICULTURE PUBLICATIONS

A Bibliography of Farm Buildings Research

Part III: BUILDINGS FOR POULTRY.

Part IV: BUILDINGS FOR CATTLE. Agricultural Research Council. (Price 4s. 6d.)

Miscellaneous

Fixed Equipment of the Farm: Leaflet No. 39.—FARM BUILDINGS: ROOF COVERINGS. (H.M.S.O., 1s.)

EXPERIMENTAL HUSBANDRY FARMS. EXPERIMENTAL HORTICULTURE STATIONS. Progress Report, 1960. (H.M.S.O., 4s.)

F.A.O. Agriculture Development Paper No. 65: IRRIGATION BY SPRINKLING. (Obtainable from H.M.S.O., price 5s.)

Research and the Agricultural Practitioner

By PETER J. M. ASTON, M.A.(Cantab.) (Professional Associate), Q.A.L.A.S.

Publication in the October, 1960, issue of *The Chartered Surveyor* of Mr. R. C. Walmsley's paper: "The Agricultural Division—Quo Vadit?" provides a convenient spring-board for the first part of this article, which develops his theme and touches also on the wider question of "The Landlord and Tenant System—Quo Vadit?"

Compared with the range of new developments in husbandry and business methods, in mechanisation and marketing requirements, it appears to the writer that fresh thinking and bold constructive action on the part of persons professionally concerned with land management is on far too small a scale. Such thought and action are essential for infusion of new vitality into the landlord and tenant system, as well as for progressive development of the agricultural surveyor's role in general.

THE LANDLORD'S ADVISORY ROLE

Only a sprinkling of landlords fulfil any major advisory role in relation to their tenants' activities, and it is suggested that there is great scope here for provision of a really worthwhile service by landlords which would help to bring them into closer contact with their tenants, infuse a new spirit of partnership into the landlord/tenant relationship, inspire wider adoption of efficient and progressive farming methods, ensure optimum use of both landlord's and tenant's capital, and generally operate to the short and long-term advantage of both parties.

The advisory role which might be filled by the landlord can be illustrated by reference to Figure 1. This illustrates in diagrammatic form the progress of information through its various stages down to the 300,000 or more individual owner-occupiers and tenants who can translate it into practice. Unfortunately much information does not penetrate as far as stage J in usable form, and much more only penetrates in isolated small patches.

The medium and large size estate owner, by stepping in at stage H, could go a long way to bridging the gap between stages F and J, which is at present so large. With assistance from stage G specialists, he could do this, in most cases through his agent, by keeping abreast of new developments, which would involve amongst other things a wide study of the relevant literature, attendance at demonstrations, shows, conferences, meetings, estate and farm walks, etc. As an owner he is concerned with a much larger unit and therefore better equipped to do this job than his individual tenants. Moreover, by virtue of his close contacts with his tenants, there would be a far better chance of the information penetrating to the latter on a broad front than with existing advisory procedures, which only function for the small minority of farmers who actively seek outside advice.

The very existence of a considerable body of professional men seeking after knowledge in this way and putting it to use in dynamic fashion, could not fail in turn to stimulate more and better organised provision of information through research and development work. It would also, by spotlighting the need for bridging the gap at stage G, help to encourage development within the landed professions of individuals or firms specialising in this sphere.

ESTATE CO-OPERATION

Landlords, by giving the lead in co-operative ownership of machinery or fixed equipment, could help to spread the benefits of large-scale mechanisation among tenants whose acreages individually would not justify the necessary capital outlay. An example of this kind of progressive view of the landlord's role is provided by the Cadland Estate in Hampshire.

On this estate, following a tenants' meeting convened by the owner, two syndicates were formed. The first, with a membership of six including the home farm, purchased a baler at a cost of £792; and the second, with a membership of three, purchased a combine harvester at a cost of £1,625. The home farm was not represented in the second syndicate because it already owned a combine. Quoted figures for 1959/60 show a baler operating cost of 18s. 8d. per ton for 436 tons, compared with a contractor's charge of 27s. 6d., and a combine operating cost of 49s. 2d. per acre for 193 acres compared with a contractor's charge of 70s.

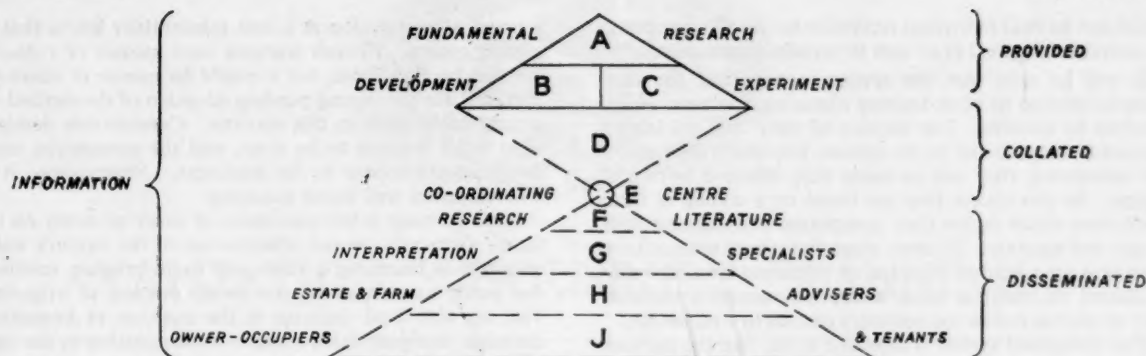
Experience on this estate has shown that there is no real difficulty with demand for a machine simultaneously by two members of a syndicate, and there is a procedure for dealing with such a situation under the syndicate rules, which are based on the Agricultural Central Co-operative Association's model. The driver of the machine is the same person all the time, and this ensures both skilled operation and proper maintenance. Co-operation in this way has been found to exert a very favourable influence on the owner/tenant relationship.

Other examples of equipment which come to mind as being particularly suited to this kind of estate co-operation are hedging, ditching and drain-laying machines and grain drying facilities. Even where there is no home farm, there seems no reason why the landlord should not give a lead to his tenants. At a time when more co-operative effort is generally considered to be essential for the well-being of the farming industry, there is surely a big opportunity here for a progressive development within the framework of the landlord and tenant system.

FARM MANAGEMENT

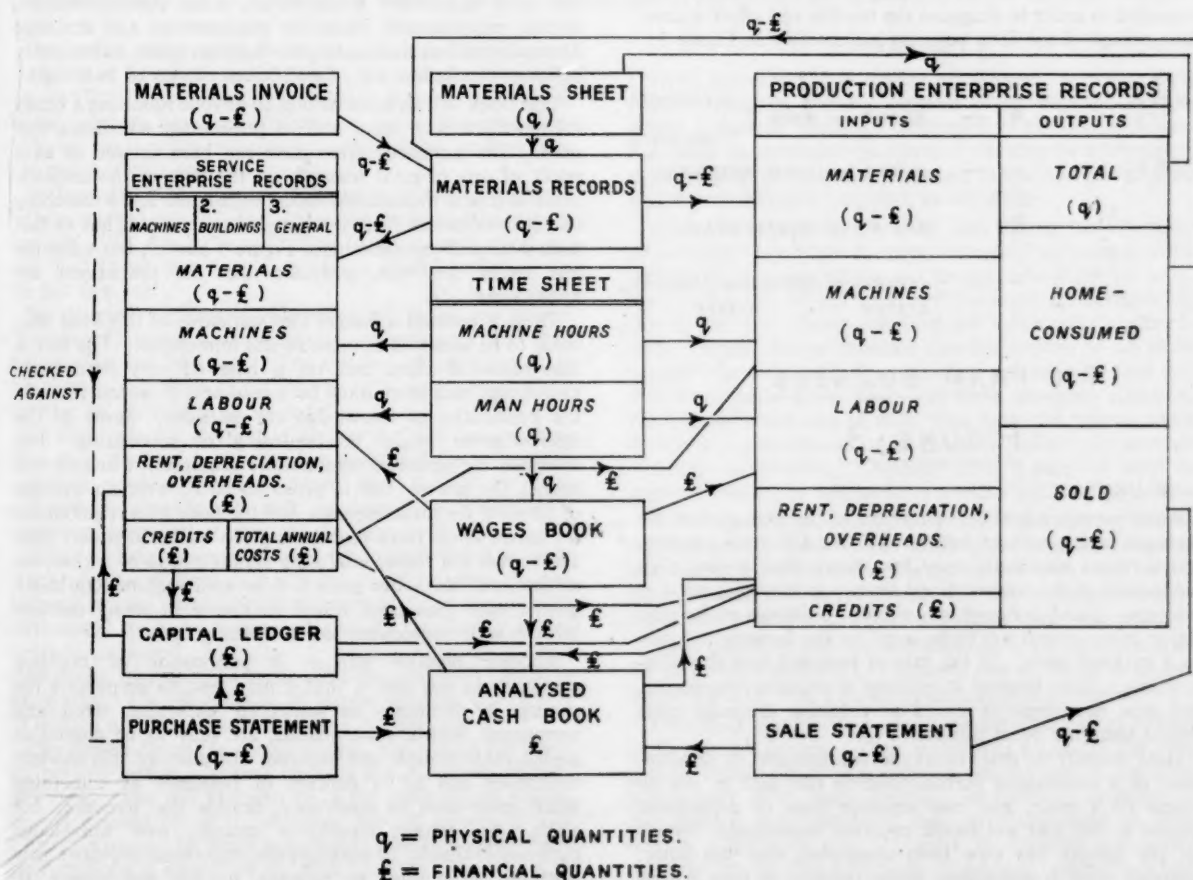
Mr. Walmsley in his paper referred to the need for a new specialisation within the profession, being that of the farm management adviser. The particular piece of research to which reference will now be made arose from the present writer's activities in this field, which he entered in the early "pioneering" days. On doing so, one of the most urgent needs was seen to be an integrated farm recording/costing system which would permit full use to be made of modern tools of management and yet remain essentially simple. Conventional cost accounts, which have now been superseded in many industrial firms by more dynamic management accounting, were not considered to be at all satisfactory, since they are backward rather than forward looking, expressed in financial terms when physical terms would in many cases be more appropriate, provide too much financial detail at too early a stage, and can be both confusing and misleading to the farmer.

There has thus been developed a new system of integrated physical and financial records to serve as a framework on



INFORMATION DIAGRAM

FIGURE 1.



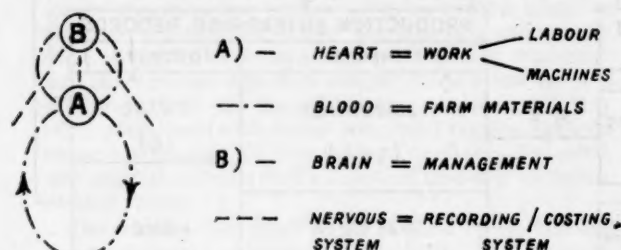
INTEGRATED RECORDING/COSTING SYSTEM

FIGURE 2.

which can be built individual records in the detail appropriate to each case. Figure 2 illustrates this system diagrammatically.

It will be seen that the system incorporates the cash analysis method of book-keeping which has now been widely adopted by farmers. The keeping of fully detailed labour records is not essential to the system, but where time sheets are introduced, they can be made fully effective by careful design. In this system they are based on a coding of farm operations which makes their completion and copying both simple and accurate. In cases where full labour records have been kept for a number of years, or where the farm economy is centred on specialist stock enterprises, sampling methods may be used to reduce the necessary records to a minimum.

This integrated system is intended to act like the nervous system in the human body. A principal function is to report immediately to the brain (management) any symptoms of ill-health in any part of the body (farm business). Preventive medicine (labour, machine and fixed equipment planning; budgeting) is employed in order to prevent disorders from developing, and when they do develop, routine remedies (adjustment of the plans and budgets) will normally suffice. Sometimes however an X-ray examination (work study) will be needed in order to diagnose the trouble and effect a cure. This concept of the farm business is illustrated in Figure 3.



THE FARM BUSINESS

FIGURE 3.

LAND DRAINAGE

Rural surveyors will be well aware of the high cost of tile drainage, which can vary between £40 and £80 gross per acre, and a recent national survey has shown that a very high proportion of the land of Great Britain is in urgent need of drainage. Land drainage may succeed buildings as the next major improvement job to be faced by the farming industry on a national scale. In the case of tenanted land the landlord has a close interest in efficient drainage arrangements, and new developments aimed at reducing drainage costs should therefore be of interest.

Until recently the main effort was concentrated on development of a continuous porous concrete tile, laid *in situ* by means of a mole, and two separate lines of experiment related to dry and wet mixed concrete respectively. Work on the former has now been suspended, and the latter, although work is continuing, seems unlikely to have a wide application for farm scale jobs in British conditions. The latest move is towards development of a plastic liner for mole drains.

Work on plastics for drainage is going ahead in this country as well as in North America and Europe, on generally similar lines. Experimental results to date offer hope that a plastic lined mole drainage system may in due course be

a practical proposition at a cost substantially below that of a tiled system. Finnish workers have spoken of reducing the cost by two-thirds, but it would be unwise to count on anything like this saving pending adoption of the method on a commercial scale in this country. Considerable development work remains to be done, and the commercial stage does not yet appear to be imminent. Nevertheless, it is a development well worth watching.

Land drainage is but one aspect of water economy on the farm. Conservation and effective use of the nation's water resources is becoming a more and more pressing problem, due partly to a rapid increase in the practice of irrigation. Tied up with land drainage is the question of homestead drainage, a subject which requires re-examination in the light of new developments such as slatted floors and organic irrigation. It is hoped to examine the question of farm drainage in its widest implications in a future article.

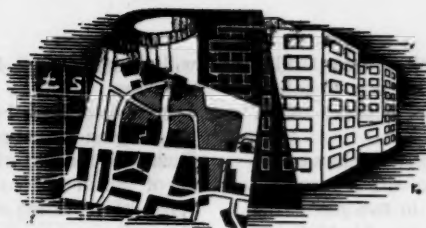
FARM BUILDINGS

A useful little book has recently been published by H.M.S.O. (price 2s.) on behalf of the Ministry of Agriculture, entitled "Farm Buildings Pocketbook." It is divided into five parts (machinery requirements, stock accommodation, storage requirements, electricity requirements and drainage disposal) and lists standard figures for floor space, cubic space, lighting, ventilation, etc., for different classes of building.

This book will be most helpful to anyone requiring a ready reference for such data, and its publication satisfies a real need. The standards given have not been arrived at as a result of any original research on the part of the authors, other of course than mathematical calculation and a searching out of information from a variety of sources. It has in fact been a stage D operation (see Figure 1 above), but none the less useful for that, provided that its limitations are appreciated.

There is perhaps a danger that standards of this kind may come to be accepted as more or less immutable. The fact is that some of them rest on a base of very inadequate knowledge, and there must be a readiness to adjust them as the boundaries of knowledge are extended. Some of the figures given might be confusing or misleading. For example, the optimum temperature requirement in enclosed houses for grown pigs is given as 60°F, with an average of 60-65°F for fattening pigs, and the floor area requirement for calves up to three months is given as 20-30 square feet. The former is a rather confusing simplification of a complex subject, and the latter gives a floor area requirement much greater than has been found necessary in many modern layouts with consequent lower building costs.

Another possible danger in publication of building standards in this way is that it may tend to perpetuate the concept of buildings as something expensive, fixed and permanent, which, once erected, are only to be altered at considerable trouble and expense. In place of this modern conditions call for a concept of buildings as something much more akin to machinery, flexible and dynamic, not static. As market conditions change, new knowledge becomes available, or management experience indicates new methods, so it must be possible, quickly and simply, to adjust the layout of buildings, including their fittings, to the new requirements. Buildings must be designed so as to be a help, not a hindrance, to progressive management. Existing building methods and materials are not at all adequate to give full and satisfactory expression to the concept of building flexibility, and there lies here wide open a field of research which urgently calls for action.



VALUATION · HOUSING · PLANNING

Off-Street Parking

By ERNEST H. DOUBLEDAY, O.B.E. (Fellow), PP.T.P.I., M.I.Mun.E.

The following paper was read at an ordinary general meeting held at the Institution on Monday, 5th December, 1960.

During the relatively short period of the last five years, the public have come to realise, albeit somewhat reluctantly, the need for adequate parking facilities in our cities and towns. Acute pressure has been brought to bear upon planning, highway and police authorities, commercial and private interests to find a solution.

In January, 1955, the car and lorry registrations in Great Britain were 3,099,547 and 1,032,868 respectively, and in January, 1960, 4,965,774 and 1,325,616, an increase of 60 per cent. and 28 per cent. for the two kinds of registrations, over the last five years.

Sir Patrick Hennessey, Chairman of the Ford Motor Company, Dagenham, said recently in his address to the firm's Annual General Meeting, "The number of private cars in this country will reach 13 millions by 1975, i.e., twice as many vehicles as are registered to-day."

In Hertfordshire alone it is known that the car registrations have doubled in the last five years and the estimate is a further doubling in seven years' time, i.e., in 12 years a fourfold increase of cars registered. Hertfordshire's experience is typical of most of the large counties.

Continued demand for parking space therefore is proved. Much of what follows in this paper is information gleaned during a private visit to North America in the spring of 1959 particularly to study traffic and parking problems. I saw much to commend and quite a few things to avoid. There is no doubt that America is the most car-conscious nation in the world; the 1959 figure of motor vehicles was nearly 70 million and one vehicle for every 2.5 persons.

The British figure for comparison is one vehicle for every 6.6 persons but it is falling towards the American pattern very rapidly and will probably be of the order of one vehicle for 3.5 persons by 1970. Another way of expressing this demand is one car for every household by 1970, averaging out the variations in individual demand.

This then is the short study of the background to the parking problem disclosing an increasing ownership of cars which will continue. I need not enlarge upon these brief and obvious facts. It will be more profitable to try to find some kind of solution to the parking problem which, as I will endeavour to show, is continually changing and defies a once-and-for-all solution.

PARKING

Until recently it was always considered, at law and by custom, that the primary purpose of the highway was to afford a right of passage. Saturation of our roads by cars has made the secondary problem of parking on the highway more important than the previously acknowledged primary use, especially during daytime in our cities.

American traffic surveys show that during the afternoon of a normal day in the business district of an average community, 90 per cent. of the cars are parked—either on or off the street—only 10 per cent. are moving; furthermore, of this 10 per cent., about one-third are looking for a place to park. These surveys illustrate that the portion of the street required for free traffic flow simply must be kept open and free from parking, or there will be a complete standstill. Kerb space which can be withdrawn from the street's traffic flow is at a premium and must be made available to as many motorists as possible. Logically then, it must be used by motorists willing to occupy it for the shortest possible time.

It may seem paradoxical that a man, theoretically, has the right to use the street to get to the place where he is going but does not, theoretically, have the right to stop when he gets there because this would impede the free milling around of other drivers who could not stop where they were going.

How, therefore, can kerbside parking be regulated to cater for short-term parkers? There are two methods to choose from—parking meters or the French blue disc system.

Two years ago, parking meters were introduced to Britain in Grosvenor Square. Their purpose is to defeat the congestion caused by all-day kerbside parkers and in my view where they have been installed in London, recently in Birmingham and elsewhere, they have succeeded in their object. Experience over 25 years in America and other countries proves that advocates for parking meters have had to fight for their introduction almost without a single exception. Use by motorists proves the value of the meter as a rationer of kerbside space. I understand on good authority that the Mayfair meters are working to more than 85 per cent. capacity for income. The significance of this reference to meters and income is important when the labour servicing of parking structures is referred to later. The meter is slowly

breaking down the traditional British habit of free parking for their cars in city areas—thus paving the way to follow the American and Continental practices of a wider use of off-street parking facilities than hitherto.

In the French blue disc system the motorist displays on his windscreen, as he parks, a cardboard disc with a revolving circular piece in the middle which shows in two places the time of arrival and the time at which he should leave. I believe the reason the French adopted this system was because it is not legally possible to charge for parking on the streets of Paris. The police force involved in checking the discs appeared to me to be considerably more than the wardens we employ in London. I could find no evidence that the fines imposed were devoted to providing off-street parking facilities as indeed our parking meter revenues must by law be devoted.

OFF-STREET PARKING

Having then derived the maximum benefit from the existing kerbside space, additional accommodation "off-street" will have to be found.

WHAT TYPE OF SPACE SHALL BE SELECTED ?

If a parking survey has been made—and I will deal with this in detail later—information will be available showing existing and potential space.

Obviously the first consideration is the nearness of the space to the destinations of the parkers who are expected to use it and accessibility from the streets along which these people drive.

Vacant lots in town areas spring to mind at once as obvious places for parking. They usually have the advantage of being near to where many parkers want to be, are usually easy to approach and require little demolition or constructional work to make them suitable. But a serious disadvantage is smallness of site. It is true that several small parking places scattered around a district are better than one large one, but frequently a small lot makes efficient use impossible and its high value, coupled with a limited parking capacity, may result in a very expensive parking space per car.

The surface car park on a vacant lot is really only a transient relief in a town area and cannot offer much help to the town's long-term parking solution.

Blighted areas near to business districts have disadvantages as sites for parking facilities. Frequently such areas are so far from the town centre that the short-term parker will not use them. Extensive demolition may be needed to make the space usable as a car park, and some parkers may dislike leaving their cars in a blighted area while they walk into town. Advantages are that the property may be cheaper to acquire than in more prosperous areas and as redevelopment may be near at hand in surrounding property it does offer the possibility of making parking areas larger as part of the redevelopment process. The parking project may, in fact, initiate redevelopment of the surrounding locality by giving a service that was previously lacking.

Whilst each problem will have variations of a general solution, I think little study will be needed to reach the conclusion that open parking lots in densely built-up areas are not really practical as I have already stated. So we are forced to examine parking structures of various kinds as a contribution to the long-term parking solution.

In Britain at the moment our shortage of off-street parking space is so acute that almost any structure will be filled with cars without difficulty, despite poor location or inadequate layout. If American experience is any guide, this situation

will change before long as competition in parking rates develops.

Because of their heavy costs of construction, the location of garaging structures requires the utmost care in survey. Details of the sort of thing found in America may probably be of use in this country where we are only in the initial stages of providing off-street parking structures.

PARKING PROJECT ANALYSIS

A parking project analysis should consist of 10 main steps :

1. Study the location.
2. Assess parking demand.
3. Investigate property development trends.
4. Determine optimum capacity.
5. Decide on best choice of design.
6. Consider functional design.
7. Estimate investment cost.
8. Search for additional sources of revenue.
9. Determine economic feasibility.
10. Appraise economic hazards.

Before a decision is taken to proceed with a project, it is as well to understand quite clearly that the time lapse between the concept of a project and its opening for operation usually involves several years. A period of between three to five years between conception and completion seemed to be about the average. This time gap can be reduced by planning development in stages.

1. STUDY THE LOCATION

This has a vital effect upon the rate charged, turnover, hours occupied and competitive advantage over other parking facilities.

(a) *Walking distance* : The garage should be within as short a walking distance as possible of the generators which create the parking demand. Patrons of the nearby business establishments do not want to walk much more than 175–200 yards—preferably not more than 100 yards. People employed in the area—the monthly parkers—do not like to walk much more, but will tolerate up to 350 yards or more, if savings are made on parking costs.

(b) *Diversification of peak load* is highly desirable, but depends upon the type of business establishments and the demand which they generate. For example, an "ideal" situation to give a near 24-hour demand, or capacity operation would be something on the following lines :—

6 a.m.	to 9 a.m.	outgoing hotel cars ;
8.30 a.m.	to 10 a.m.	incoming monthly and all day cars ;
10 a.m.	to 3.30 p.m.	shopping patronage plus noon-tide peaks for hotel luncheons, etc. ;
3.30 p.m.	to 7 p.m.	incoming hotel guests ;
7 p.m.	to 9 p.m.	evening theatre crowds ;
9 p.m.	to 1 a.m.	night-club and restaurant activities and late hotel check-ins.

(c) *Competitive advantage* in location hinges upon accessibility to main roads, proximity to large parking generators and includes matters like ease of entry, time-saving and convenience.

2. ASSESS PARKING DEMAND

This assessment of parking patronage should be conducted systematically, covering thoroughly all the businesses within the effective market area from which patronage might be attracted. The area to be served should be marked on a large-

scale map on which all parking generators have been marked. Study of this map should be systematic.

The facts to be developed should take four lines :—

(a) *Parking demand* requirements of each parking generator ;

(b) *classify these demands* as to parking types, i.e., shoppers, professional services, hotel patrons, theatres, restaurants, night-clubs and restaurants, sports and recreational facilities, e.g., dancing, etc. ;

(c) *analyse the parking time* characteristics of each group—what time do they arrive? How long do they stay? When do they leave and do these requirements vary seasonally? This gives the peak load pattern ;

(d) *the parking fees* which these potential patrons are willing to pay and how many at what price might be attracted to the facility under consideration. An analysis of these revenues should rest on the two basic types of patronage—employee parkers who work at these business establishments and transient parkers who are customers, patrons or clients of the establishments. Both groups have distinct parking characteristics as to peak hour demand and the average prices which they are willing to pay. The parking garage rates in America seem to run at a level of about 30-35 cents for the first hour and 15 cents for each additional half hour (which is about 2s. to 2s. 6d. and about 1s. for each additional half hour). Day rates were about 1 dollar 25 cents (or about 10s.).

Some thought should also be given to the possibility of joining or establishing what the Americans call a "validation" plan, i.e., where the business or trader gives relief for the parking fees paid. Messrs. Bourne and Hollingsworth of Oxford Street have operated this sort of scheme successfully for years at 2s. for the first hour, and 1s. for each hour thereafter. The tickets issued by the garage operator can be cashed at the main Oxford Street store within three months of their date at up to 25 per cent. of the goods purchased, e.g., for a £1 purchase, parking tickets to the value of 5s. will be accepted, leaving a net further payment of 15s. by the parker-shopper. I believe that the trend towards validation by stores will become increasingly used as competition in central business districts intensifies. Consequently validation plans are important to garage promoters. After studying the facts disclosed by the survey, the anticipated revenues and volumes from the following kinds of parkers should be assessed :—daytime transient parkers ; validation parkers ; monthly parkers ; evening and overnight parkers.

3. INVESTIGATE PROPERTY DEVELOPMENT TRENDS.

The local town maps should be closely studied at the office of the local planning authority to uncover any trends in land use which might affect the parking project development either favourably or unfavourably. For example, the conversion of an office building to house automatic equipment instead of people would have an adverse effect on a proposal.

On the other hand, rebuilding of sub-standard terraced housing and replacement by offices would favour a project.

Careful enquiry should be made at the local planning office for details of any urban renewal scheme, for these are likely to be drawn up on the basis of better parking facilities for the general public in the renewal area.

In particular, in view of the emphasis on carrying motorway proposals into cities e.g., M.1 through Hendon to Swiss Cottage and possibly beyond, details of motorway overpasses or underbridges should be sought at the local planning office.

Their effect on the access possibilities to the garage is obvious.

4. DETERMINE OPTIMUM CAPACITY

In most parking projects there are alternative choices in design and possibly some degree of latitude in the size and shape of the site.

Practical operating experience with various types of design indicates the need to synchronise both the capacity and design to the effective market.

Just how well this is done affects operating costs. Low operating costs give management some degree of latitude in adjusting the rate charges to attract the most profitable balance of transient and monthly patronage. The decision on optimum capacity should take into account street capacity, the ability of the garage structure to absorb incoming traffic and discharge outgoing cars during peak load conditions. In parking structures other than mechanical handling systems, if the capacity per floor is large, then the number of floors should be low. If the area per floor is small and land value high, then stacking to greater heights may be justified.

As a general rule, facilities for a total capacity up to 400 cars are preferable. They do not require the degree of management supervision generally required for larger operations. They have less intense peak loads and can operate with a small, friendly operating staff. In larger operations the peaks are more intense, the contact between operating personnel and customer becomes more impersonal and the need for closer supervision intensifies.

I need hardly say that it costs more to operate a multi-storey parking structure than it costs to operate an open parking lot having the same capacity. Ramp structures are normally built up about six levels above the ground. Higher structures are more costly to operate and service standards are greatly reduced.

I would qualify the above general rule by saying that I saw several car parking structures where more than 400 cars were parked by using customer self-parking. Here each floor was divided into stalls marked by paint on the ground, with a parking meter to each stall. The factor which governs optimum capacity in these structures is still the street capacity to deal with peak loads. A self-metered park gives a much higher outflow than one where the charges have to be paid as the motorist leaves, for the obvious reason that the charge is paid as he parks when the peaks are not so intense—and not on leaving.

I saw several American parking garages where one man operated a 500 car split-level ramped park and two men operated a 700 car multi-floor garage. Both these examples, and others, used metered stall customer parking. The labour-saving in operational costs in these structures was strikingly different to our present approach in Britain to off-street parking structures.

5. DECIDE ON BEST CHOICE OF DESIGN

There are almost always alternative choices of design for a given site. The problem is to select the best type for that site with the given market and sponsorship.

(a) *Ramp-type parking structures* use inclined driveways for inter-floor travel by the car under its own power. There are four basic sub-divisions of floor treatment :—

- (i) standard building structure with connecting ramps ;
- (ii) standard floors with circular ramps ;
- (iii) staggered floor (or split level) construction ;
- (iv) sloping floors.

Various combinations of these types are used in America to meet special situations.

(b) *Mechanical handling methods* use various kinds of electrical, mechanical and hydraulic inter-floor travel means. This type of structure can be classified as :—

- (i) standard elevator with manual parking ;
- (ii) conveyor type facility ;
- (iii) mechanical parking structure with elevator which moves laterally in a slot ;
- (iv) automatic parking structure which uses an elevator with or without lateral movement together with car positioner turntable and/or other control devices together with push-button control system.

(c) *Basic site characteristics* of the ramp and mechanised parking systems are as follows :—

Ramp type structure :—the site must have a width of at least the outside turning diameter of a car and a minimum depth of four maximum length cars plus two aisles. This means an operational minimum of about 6,500 square feet in practice. It must be borne in mind, however, that sites less than about 10,000 square feet should be avoided because they must usually pay a penalty in space and or operational efficiency. I found that about 12,000 square feet or more was the optimum size for a ramp structure using attendant parking. Self-service structures could, and should, be larger to provide a simple, direct flow pattern with adequate ingress and egress.

Mechanical parking systems have the following characteristics :—

- (i) they can use higher value land than ramps of any type because they can stack higher and hence can park more cars per square foot of land. They normally operate in the six to twenty-storey range ;
- (ii) they can use narrow frontages in the range of 25 feet to 75 feet whereas optimum size ramp structure require 80 feet or more in frontage ;
- (iii) they can use small plots which normally are not suited to a ramp-type operation and this characteristic adds to their value in using high value sites or as the Americans call them, "hot spots" ;
- (iv) they can more accurately gear capacity to the market potential ;
- (v) they have the ability to achieve higher turnover rates than the usual ramp types ;
- (vi) they cost more for each car space than a concrete and steel ramp structure due to the car handling equipment.

(d) *Characteristics of the project* and its prospective backers definitely influence the choice of design. When the broad outlines of the parking project are conceived, its site, type of patronage, method of finance and sponsorship are known within reasonable limits. The problem at this stage is to translate these factors into the broad outlines of the project, its approximate capacity, amount of money required to develop, rough estimate of potential gross operating costs, net yield and possible methods of finance.

The site, its size, shape and topography and estimated cost of acquisition are fairly well known. These factors nail down within reasonable limits the alternative choices of design open to the sponsors.

The sponsorship : whether the project is to be developed by private investors, the municipality, a private enterprise group, a department store, hotel, office building, or other

sponsor, narrows down the design problem. Once the proportion of all-day parkers and short-time parkers is defined, this establishes fairly well whether the layout should be exclusively single parking or can use some proportions of double and triple parking. It also helps to show whether a ramp or a mechanical parking system is to be favoured.

Method of operation is first a question of whether the site is of proper size to get an internal traffic-flow pattern and stall arrangement which will prove attractive to the motorist. Sometimes, however, the questions of self-service versus attendant operation and the question of ramp versus mechanical are settled as a policy decision by the sponsors.

Economic comparison.—After the factors of size and policy have been settled, the question becomes an economic one, usually calling for a comparison to be made between the alternative methods. This takes into account the number of spaces, the estimated gross revenues, manpower handling costs, management costs, and other expenses, to arrive at the net yield. Then, on the basis of relative investment costs, flexibility to adjust to changing conditions, and relative service capabilities, the question of self-service versus attendant operation may be resolved. Reference should be made to my earlier remarks on self-parking in paragraph 4 of this analysis.

(i) *Self-service* has the advantage of eliminating most of the management problems and also the headaches of loss and damage. This operation also steers clear of the relationship between bailor and bailee, since the operator simply rents space and the motorist retains control of the car as he parks and unparks it and retains the key. I must admit that I was greatly impressed by the simplicity of the self-service operation, and the apparent good will of the public using the garage, as they parked their cars and slotted their quarters in the meters.

(ii) *Attendant operation* is normally justified on the grounds of better space utilisation and the simple fact that size and shape of the site are more favourable to this method of operation. Parking structures should be designed as such and not just as warehouses.

Construction economy versus operating economy.—Far too many parking structures have been built in America without proper consideration being given to the operational problems. Constructional economy is one thing, but operational economy is another. The economic usefulness of a parking structure depends upon a proper balance of these two factors.

Preventable mistakes.—One of the common errors in designing parking structures is to nail down column spacing and other critical dimensions without due consideration of the operational problems.

This puts the operation in a strait-jacket by adding unnecessarily to the daily costs of running the business. I was given an example where a design used 3 two-car bays in a 53 foot section when it could have used 2 three-car bays to better advantage. The two car bays had about 16 feet in the clear which is all right on the storage floors but at the ground level entrance it was operationally impossible to get a two-lane entrance and a two-lane exit. In normal operations the pair of 16 feet openings provided just one lane in and one lane out.

The use of 2 three-car bays would have doubled the entrance capacity downstairs and added several inches to the stall widths upstairs.

6. CONSIDER FUNCTIONAL LAYOUT

This is one of the surest safeguards against built-in inefficiency. Such a layout deals with the internal traffic flow from the point of entry to the exit. It is based upon the information developed on the character and extent of the demand, the characteristics of the site, the design and sponsor which have been discussed above. It deals not only with the movement of cars, people, and operating staff, but also with the placing and type of control facilities for the safe and efficient movement of cars, personnel control, issuing tickets and collecting parking fees.

7. ESTIMATE INVESTMENT COST

This is composed of three component parts: land value, construction cost and financing costs.

Land Values

In the American examples I saw land values in "hot spot" locations, where vertical stacking is normally justified, usually ranging from 8 dollars to 50 dollars per square foot. (£2 17s. 0d. to £17 17s. 0d. per square foot.)

There are also situations where multi-floor structures can be justified on grounds other than land cost—for example, to provide parking convenience within a short walking distance of a hospital, an hotel or a departmental store. I saw one of the largest parking structures in the world capable of holding 2,000 cars built into a suburban shopping centre outside Washington, at Arlington, Virginia. Floors connected directly into the store from the adjoining garage. This garage was operated by the Hecht Store Company as a free service to motorists using the centre, which was not confined to their store. The trend of merchant dependence upon motorists will, I hope, be duly noted by our leading stores in this country.

Vertical stacking spreads the cost

The higher the stacking, the less ground area per car space. Land valued in America at 40 dollars per square foot would mean an investment of 8,000 dollars per car space as an attendant operated lot. But a four-deck structure would cut the space allocation from 200 square feet to 65 square feet per car space and the land investment to 2,600 dollars per car space; a ten-storey structure would cut the ground space allocation to about 26 square feet and the land cost per car space to 1,040 dollars.

Construction Costs

These range from 4 dollars to 6 dollars per square foot and from 1,200 dollars to 2,000 dollars per car space for the usual structure depending upon the design and the local cost conditions.

Design factors affecting construction costs which should be looked into are the building bye-laws to:

- (a) eliminate unnecessary requirements such as sprinklers;
- (b) recognition of the open deck parking structure as a new building type—not bound by "garage" requirements, e.g., to avoid dangers from petrol storage;
- (c) use of exposed steel parking decks, etc., and
- (d) use of lighter floor loadings.

Finance Costs

In America these range from 2½ per cent. to 6 per cent. depending upon the sponsor and the project. Where the financing is by a municipality as a general bond issue (a peculiar American practice not followed in Britain), the lowest possible rate is achieved. Sponsored by a city or authority with revenue bonds backed by parking meter revenues, the rate is still quite low.

As an indication of the public confidence in parking meter revenue, I would quote my experience in Detroit. The city could not raise funds on a bond issue for local city needs. A separate parking authority consisting of four city councillors, four members of local industry and commerce and three or four prominent citizens floated a bond issue to construct off-street parking structures backing the interest with parking meter revenues. The issue was ten times over-subscribed. Financed by private capital, the interest rate depends largely upon the project, the sponsor and the money market.

8. SEARCH FOR ADDITIONAL SOURCES OF REVENUE

This should include these three possibilities:—

Terminal function of a multiple floor-parking project being located close to a "hot spot" pedestrian activity makes it a miniature Piccadilly Circus where services and convenience goods might be presented at an opportune psychological moment. This means that additional revenue can be picked up from telephone booths, cigarette machines, automatic sales machines and coin-operated parcel-checking lockers.

Dual-purpose parking facilities should always be explored. It is simply good business for the parking project to include within the structure a "generator" which creates parking patronage or user, and at the same time the generator attracts more business by reason of having integral parking conveniences. Businesses such as retail stores, banks and restaurants are always good prospects for a dual-purpose parking project. The inclusion of banks may surprise British readers but I saw many kinds of bank-parking facilities. The Bank of America built simple car-parking structures of two or three floors ramped and without attendants. The entrance notice said "Bank of America—free parking for 30 minutes." The idea behind this time was to allow customers to use the bank and make one shopping call. We have not yet reached this stage in Britain but I would hesitate to say that it could not develop in British banking circles.

Automatic services are another potential source of substantial revenues. This applies particularly to the large capacity structures or to the smaller ones which receive substantial hotel parking patronage. Automatic service sales such as petrol, oil, lubrication service, wash and polish facilities can be put to profitable advantage in many projects if they are designed to fit into the internal flow and operational patterns.

9. DETERMINE ECONOMIC FEASIBILITY

This involves a careful study of revenues and projected future revenues; operating and overhead cost items; investment costs; rates and taxes; and yield. It is fundamental that this study takes into account land use trends indicating probable future shifts in demand requirements affecting the project as well as any possible labour cost changes. It should also analyse the ability of the project effectively to adjust itself to these possible changes.

10. APPRAISE ECONOMIC HAZARDS

The final test is one designed to "road test" the project while it is still on paper. It investigates all possible new parking sites within the project's market area (the local planning office can help here) and weighs the possibility that any of these sites might out-compete this project at some future date. If another site can have economic advantage of one kind or another—lower acquisition cost, more efficient design, better location—then the project under consideration is a risky one. The hazard appraisal should

take into account :

- (a) possible changes in street width or levels (this latter point is introduced in view of the new motorways obviously going into built-up areas in the future with access ramps having an effect on existing street levels. The planning and highways departments of an authority can help on this point) ;
- (b) possible effect of one-way streets ;
- (c) changes in car sizes and manoeuvrability in relation to the aisle and stalls provided.

BASIC RAMP DESIGNS

There are six basic types of ramp designs :—

- 1. straight ramps using standard floors ;
- 2. staggered floor ramp systems ;
- 3. circular ramps ;
- 4. sloping floors ;
- 5. special applications ;
- 6. combination of methods.

1. STRAIGHT RAMP USING STANDARD FLOORS

Straight floor-to-floor ramp systems were the earliest designs because they used standard building construction. The ramps usually had long runs due to the fact that the usual floor to floor heights were never less than 10 feet, sometimes higher. Recently lower car-heights have encouraged the use of lower floor-to-floor heights which in turn has reduced ramp grades to those normally found in street-traffic conditions. This system of design could be broken down into many variations.

2. STAGGERED FLOOR RAMP

The original feature of this design is to have two buildings in adjoining relationship with the floor of one building connected by short straight ramps to an intermediate floor of the other building. The original design called for a ramp length of about 33 feet which gave a 15 per cent. ramp grade, easier to drive on with less clearance of car stalling than the full floor-to-floor run of about 75 feet in the earliest designs.

Over the years this design has proved itself to be the most popular and versatile ramp system in use. It is readily adaptable to meeting the limitations, costs and peculiarities of high value sites. Recently, however, the overwhelming preference of motorists for self-service parking is stimulating new design types, notably in circular ramps, sloping floors and express ramps.

It is worth noting that several Americans told me that the trend towards self-parking has its foundation in the revulsion of people towards tipping the car jockey who put the car away on arrival and brought it down on leaving. Having to do this several times a day became quite expensive, they said, when added to the parking charge which they accepted without question.

3. CIRCULAR RAMP

This design is based on the fact that it is easier for the motorist to set the steering wheel on a tight turn and hold it there during a continuous climb or descent. The only decision the driver has to make is at which floor to turn off.

Since the war ended, I gather that there have been three distinct trends favourable to a further expansion of circular type ramps—a trend towards lower floor-to-floor heights ; the preference of motorists for self-service ; the trend of staggered floor designs to use sloping and warped storage floors makes them take on the characteristics of the circular ramp types.

4. SLOPING FLOOR STRUCTURES

This type has the advantage of low grades for ascent and

descent, usually about 1 in 25, but it is not readily converted to non-parking use, a factor which must be at the back of all successful designs.

5. AND 6. SPECIAL APPLICATIONS AND COMBINATION OF METHODS

With the development of mechanical parking structures and underground parking garages, more integral parking buildings and the continuing trend towards self-service, there is emerging a trend towards using a combination of several types of inter-floor travel systems in one project. For example, the sloping floor parking structure gets away from ramps as such, but the special advantage of low gradient ascent, while searching for an open stall, vanishes when the motorist wants to get out. He does not want to travel a long circuitous route by a 4 per cent. grade and put up with conflicting movements of cars entering and leaving the numerous parking stalls on his exit route. For this reason the concept of the express ramp combined with other inter-floor travel methods has come into being. The sloping floor structure exposes to the incoming motorist one parking stall for each 5 feet of travel. If his exit were by the same route he would have to put up with an equal amount of possible interference.

However, exit via the express ramp gets him back into the street in a hurry with little interference from other parkers. There are also advantages sometimes in using ramps with mechanical parking systems.

BASIC MECHANICAL PARKING SYSTEMS

The limitations of surface parking, the small size of available sites, rising manpower handling costs and the plain need to provide "proximity parking" at low cost all point to one thing—more mechanical parking.

The first mechanical parking patent for cars dates back to 1906, so it is not a relatively new idea. It is only since the war ended that the practical application of mechanical handling methods to commercial parking has become a profitable investment.

I found that American manpower costs to park and unpark a car took about one-third of the gross revenue which is a big factor against attendant-operated parking structures.

The challenging opportunities for mechanical handling techniques in parking are :—

- (1) Manpower normally required for car-handling can be eliminated.
- (2) Maximum space efficiency can be achieved.
- (3) Small parcels of land may be used for parking.
- (4) "Hot spot" locations can be used through vertical stacking and high rate of turnover.

RAMP VERSUS MECHANICAL GARAGES

No mechanical garages are known which have been constructed for self-parking, and the reason for this is understandable. Ramps are needed for self-service parking garages, and these structures must retain the possibility of conversion to self-service even though they may be operated initially by attendants. As stated elsewhere, the Americans have cut down their garage labour costs much below our British standards and I am convinced that this same trend will be evidenced here as parking location and design becomes more competitive.

Ramp and mechanical garages are comparable in initial cost per stall, depending of course on local construction factors.

The operating costs of mechanical garages are above those of customer-parking ramps. At Rochester, New York, the operating costs for a 200 car pigeon-hole mechanical park

were twice as great as a 500 car 3-deck customer-parking ramp in the same town. The difference lay largely in the labour costs—one ticket attendant and two lift operators against one man controlling the 500 car ramp.

Mechanical garages can provide greater storage capacity in a small area, since they operate more economically with a greater number of storage levels. On the other hand, regular maintenance of lifts, dollies, etc., must be carried out and they are potentially subject to interruption of operations by electrical or mechanical breakdowns. Individual cars can be handled more rapidly in mechanical garages, but their greatest weakness is in handling concentrated peak loads, either on arrival or departure.

UNDERGROUND CAR PARKS

These are rather specialised constructions, depending upon location, shape and size of site available. Contrary to my expectations, most of the underground garages were built and operated by private enterprise.

At Detroit, a company took a 25-year lease from the city of land right in the heart of the town, rather like Piccadilly Circus but about twice the size. The garage took about 20 months to build, and holds 1,025 cars on two levels. In its first year of operation the returns were 500,000 dollars. The city are paid 25,000 dollars a year rental plus a sliding scale of the parking fees collected starting at 5 per cent. of gross fees. I was informed that this grand circus project is so profitable that the city were likely to exercise their option at the end of 15 years to have control of the garage and I understand that the operating company were quite satisfied with this arrangement because of their vast constructional and operational programme elsewhere in the States and North America. Clearly this is a most profitable field of operation!

Details could be given of other underground parking structures but they are rather similar in operation despite slight changes in constructional style.

As this paper is being written, it is encouraging to hear the announcement by the Minister of Transport that a 1,000 car underground car park is to be constructed under Hyde Park and that the intentions appear to be that this should be operated by private enterprise.

WHO SHOULD PROVIDE OFF-STREET PARKING FACILITIES?

This question is undoubtedly at the root of any solution to the parking problem. From what I have seen in North America and the Continent, there is no general answer to this question.

Broadly speaking, there are three types of operators:

- (a) local authorities;
- (b) department stores, offices, etc. (i.e., sponsored);
- (c) private or commercial operators.

In some districts, a combination of two or all of these operators may be needed to attack the problem with any hope of success.

(a) Local Authority Operation

Advantages: It may be said if parking facilities are for the use of the general public, they should be provided by the public. A local authority sometimes have land which can be used and as the municipality is concerned more with general convenience than with profit-making, municipally-operated parking facilities can be offered to the parker free, or where this is not possible, at a low cost. A local authority can usually locate parking facilities as part of the local town plan or redevelopment scheme in a way which neither of the two other operators can do. By rationing kerb space with

meters, local authorities are becoming increasingly responsible for finding parking places for motorists forced off the local streets. North American experience demonstrates most forcibly that under no circumstances should meters be used as revenue raisers for the local rate fund. The income must be kept for providing off-street parking facilities.

Disadvantages: Where local enterprise has large capital sums invested in parking facilities, it may be regarded as unfair that a municipality should go into the parking business. This is about the only real argument that I can find against local authority operation.

(b) Sponsored Operation

Advantages: In the face of intense competition not only between traders in different towns but parts of the same town, it can be argued with logic that as the traders are responsible for creating the demand for parking facilities to use their stores they should be responsible for meeting the demand. From the merchant's point of view, supplying parking space with reduced rates for customers who validate tickets by patronising the merchant is frequently a very inexpensive way of bringing customers to the store. From the parker's point of view, the space provided is attractive because it is cheap or, remembering the vast garage at Arlington mentioned earlier—and there are thousands of these in North America—it is free. Since profit from the control of parking space is not of as much importance to the merchant as the matter of getting a customer to buy his goods, merchant provided facilities need not charge as high fees as commercially-operated facilities. One is convinced by the number of merchant-operated parking facilities in America that they must be successful in operation and a paying proposition.

Disadvantages: If merchants operate parking facilities for their customers' benefit, it is the customer and not the merchant who pays in the final analysis.

Should the costs of operation be absorbed temporarily in lessened profits on the assumption that the existence of the facility will increase business enough to take up the slack?

If merchants wish to arrest the decline of their trade to areas where parking space is available, their course of action is obvious.

In the interests of a complete parking programme, total dependence on merchant-operated facilities is undesirable. The merchants' lots are usually for shoppers only, at least in intent. Often they are not co-ordinated with any community-wide plan. Merchants may sometimes object that their business does not create the whole of the parking problem so why should they be required to provide the solution? But it is a fact that they are freeing kerb space for the use of persons who may or may not be shoppers when they provide off-street parking facilities.

As both municipalities and merchants have a combined desire to see their businesses operate at a profit, the strongest need for combined operation in these two groups is highly desirable. How this can best be achieved must be worked out locally, e.g., a merchant or several merchants may pay a rental or capital sum to a municipal parking garage suitably located to their premises and thereby commute their responsibility to provide customer car-parking space at their stores.

(c) Commercial Operation

Advantages: The first argument is that this might be considered to be a traditional way of doing business with the facility being put into operation much more quickly than either of the other types of operators. It could be argued that the parkers pay the entire cost of the facility and

consequently there is no liability to public funds at all. Furthermore the structure remains as a contribution to the local rate fund.

Disadvantages: There are more arguments against commercial operation than for them. The first is that parking spaces operated by these sources are frequently established on a temporary basis on vacant sites, so consequently there can be no guarantee of a permanent solution of the long-term parking problem. The operating costs including lease of the property results in high parking fees in order to give the operator a commercial profit.

This particular type of garage provision seems to be highly vulnerable towards shifting trends of business and population movement, with the result that parking rates may frequently have to be adjusted in order to retain custom.

From the amenity point of view, some of the privately-operated parking garages gave little more than just the bare bones of what was needed to provide the facility. Incidentally on this point, the open-deck structure is the best

fire risk because of its excellent ventilation but it is a difficult neighbour to live with in a street picture.

CONCLUSION

Although it may be thought that I have covered a wide field in this paper, I am only too conscious that just as much ground, if not more, remains to be covered.

For example, it has not been possible to deal with vast surface parking facilities where one man controls 1,200 cars with mechanical aids, and at night the park is operated automatically; with park-at-your-desk projects which look like normal office buildings; with electronic counting and recording devices to facilitate the working of parking structures and finally with ways and means of discussing how operational costs by the three types of operators could be met.

What I have endeavoured to do is to stimulate interest in this subject of off-street parking which is in its infancy in this country. I hope I may have been able to offer some guidance on initial and fundamental points to those persons whose duty and responsibility it is to see that off-street parking facilities are provided on an increasing scale during the next few years.

Rating Surveyor's Diary

HOUSE OF LORDS

OBJECTS OF PROFESSIONAL INSTITUTION

Institution of Mechanical Engineers v. Cane (VO).

(Before Viscount Simonds, Lord Reid, Lord Radcliffe, Lord Tucker, and Lord Denning.)

"Purposes of Science Exclusively"

Their Lordships dismissed this appeal by the Institution of Mechanical Engineers from the decision of the Court of Appeal, holding in favour of the valuation officer and the Westminster City Corporation that the Institution was not entitled to exemption from rating under section 1 of the Scientific Societies Act, 1843, because it was not instituted for purposes of science exclusively, and was not supported wholly or in part by voluntary contributions.

Viscount Simonds said that the structure of the Institution, its avowed purposes, and its actual practice placed it altogether outside the scope of the Act; thus the first condition of exemption was not satisfied. On the second question, whether the Institution was supported wholly or in part by annual voluntary contributions, it appeared to his Lordship to strain credulity too far to claim that members, associate members, companions, graduates, and students paid their annual subscriptions in a spirit of altruism and without regard to the advantages that they obtained from membership. Where, as here, the Institution was associated with a particular profession and the use of initials indicated the attainment of certain qualifications, it was not to be believed that a material benefit was not derived from it. The appeal should be dismissed.

Subscriptions not "Voluntary Contributions"

Lord Reid, concurring, said that he agreed with the decision of the Court of Appeal but on rather different grounds. In his Lordship's opinion the members' subscriptions were not "voluntary contributions" and the Institution failed to satisfy section 1 of the Act.

Lord Radcliffe concurred fully with Viscount Simonds that the Institution was not instituted exclusively for purposes of science. On the second question his Lordship did not think that the *Art Union* case ([1896] A.C. 296) laid down any

rule to the effect that a subscription could not be voluntary once any individual benefit was obtained. The *Art Union* case, so far as his Lordship could see, required that the decision as to what was or was not voluntary was a matter of degree, advantages obtained being weighed against the value of the subscription and possibly the responsibilities undertaken. That seemed to his Lordship correct in principle.

Having regard to the purposes of the Institution and its current activities, he did not think that the question whether its members paid voluntary subscriptions properly arose. As what they subscribed towards was primarily a professional association, the case was concluded by that consideration.

Lord Tucker and Lord Denning delivered concurring opinions.

COURT OF APPEAL

ART GALLERY HELD RATEABLE

Distinction between Open Spaces and Buildings

Clayton (VO) v. City of Kingston-upon-Hull.

(Before the Master of the Rolls, Lord Justice Harman, and Lord Justice Donovan.)

The Court, by a majority decision, allowed this appeal by the valuation officer from a decision of the Lands Tribunal (Mr. Erskine Simes, Q.C.) that the Ferens Art Gallery, Kingston-upon-Hull, should be exempt. Leave was given to appeal to the House of Lords.

The Master of the Rolls said that the view which found favour with the Lands Tribunal was that any occupation by the corporation was in the character of mere custodianship for the public, and accordingly had no beneficial or other quality sufficient to attract liability to rates; and that the principles applied in the *Brockwell Park* and *Downham Market* cases to parks or open spaces were no less applicable to a public art gallery.

A park was not occupied by anyone; but in the case of a building his Lordship thought that it was occupied by those whose function it was to maintain the building, and not the less so because during the specified hours members of the public were admitted. Where more than one set of persons had the rights to be in a building, that set of persons having

the control of the building was treated as the rateable occupier.

The Brockwell Park Principle

The Brockwell Park principle was that free and unrestricted user by the public was exhaustive and exclusive of any right to beneficial occupation. His Lordship did not say that this principle could not be applicable to a building as opposed to an open space. It might well be that if a public authority erected a shelter under an obligation to maintain it as a public shelter for all time, the public could be said to have such right of free and unrestricted user as would be exhaustive and exclusive. He would allow the appeal.

Lord Justice Harman, in a concurring judgment, said that the *ratio decidendi* in the *Brockwell Park* case was that no one was in occupation at all and therefore no one was rateable.

Lord Justice Donovan, dissenting, said that in the *Brockwell Park* case the principle that the public were in occupation of the park derived from the fact that the park had to be held in perpetuity for the use of the public. The same was true of the art gallery. The public went into the art gallery just as they went into Brockwell Park, to enjoy what each had to offer, in both cases in the exercise of permanent public rights.

OXFORD COLLEGES

Effect of Benefaction on Percentage

Magdalen College v. Howard (VO)

(Before the Master of the Rolls, Lord Justice Harman, and Lord Justice Donovan.)

Their Lordships adjourned these appeals by the valuation officer for the City of Oxford and the Oxford City Council, as the rating authority, and remitted to the Lands Tribunal its interim decision of 28th May, 1959, as to the principles on which the rating assessments of Magdalen College, Jesus College and Keble College in the University of Oxford should be based, with a direction that the Tribunal should state more fully what it had intended by a paragraph in that decision referring to the fact that money for the erection and improvement of university buildings and colleges was "generally provided by benefaction."

The relevant paragraph in the Tribunal's decision was as follows: "The provision of University education is not a commercial venture and the money for the erection and improvement of University buildings and colleges is generally provided by benefaction, and for these reasons we consider that a commercial rate of interest is not appropriate. We would apply 2½ per cent. as being half of what we were told on evidence was the normal percentage used for commercial properties when valued on the contractor's basis." The Tribunal had gone on to say that it expected that the hypothetical rent of Magdalen College on that basis, as modified, would work out at £9,000.

It was not at all clear, on the form of words used by the Tribunal, what exact significance was being placed on the possibility or fact of benefaction being available to the colleges.

Tribunal's Intention

Their Lordships had come to the decision that they ought to send this matter back to the Tribunal with a direction that it should state more fully what it intended by that paragraph and in particular what relevance it attached, in arriving at the final figure of 2½ per cent. to the fact that the money for the erection and improvement of colleges was generally provided by benefaction.

Lord Justice Harman and Lord Justice Donovan concurred.

DERATING

Laundries not "Retail Shops"

Heathfield Laundry (Birmingham), Limited v. Almond (VO) and *G. T. Cushing (Trading as Fakenham Steam Laundry) v. Webber* (VO).

(Before the Master of the Rolls, Lord Justice Harman and Lord Justice Donovan.)

The Court heard jointly these appeals, by way of cases stated by Heathfield Laundry (Birmingham), Limited, of Finch Road, Handsworth, Birmingham, and Mr. G. T. Cushing (trading as Fakenham Steam Laundry), of Holt Road, Fakenham, Norfolk, against decisions of the Lands Tribunal that their premises, admittedly factories or workshops, were also of a character similar to a retail shop and were therefore rateable at a higher level. The respondents were the local valuation officers concerned.

Lord Evershed, M.R., said that a hereditament which was used and occupied as a factory would cease to be an industrial hereditament for the purposes of the Act if it was primarily used as a retail shop, or as premises where retail trade or business, including repairs, was carried on. It was conceded that these hereditaments were occupied and used as factories or workshops. The question was whether the premises were nonetheless primarily used for the purposes of a retail shop.

In the cases before the Court, some two-thirds of the laundries' business was done by roundsmen collecting and delivering, using vans. Some people, however, called personally at the laundry premises, leaving their materials to be washed and later collecting them. The mere fact that the public resorted to the premises in question to collect their laundry did not mean that the premises were used for the purpose of retail shops. It was quite plain that, at Fakenham, customers calling were not welcomed and there was nothing to indicate an invitation to call. At the Birmingham laundry there was the basket and the window being opened by a lady, but here again his Lordship felt there was a singular absence of anything which could sensibly or reasonably be called an invitation. For those reasons the appeals succeeded.

Question of Fact

Lord Justice Harman said that in the end these cases were decided on the facts. Authorities were not meant to be a prison but a guide. Nobody could call a laundry a shop.

Donovan, L.J., also agreed, and the appeals were allowed with costs. The Court was told that the matter affected a large number of similar hereditaments, and leave to appeal to the House of Lords was granted.

RECENT LANDS TRIBUNAL DECISIONS

GROSS OR NET ANNUAL VALUE

(Note: Section 22 (1) (a) of the Rating and Valuation Act, 1925, as amended by the Rating and Valuation (Miscellaneous Provisions) Act, 1955, provides:—

"If the hereditament consists of one or more houses or other non-industrial buildings, with or without any garden, yard, court, forecourt, outhouse or other appurtenance belonging thereto, but without other land, there shall be deducted from the gross value of the hereditament an amount representing the deduction specified, in relation to that gross value, in the second column of the table contained in Part I of the Second Schedule to this Act."

Hereditaments valued to gross value are entitled to the one-fifth (or one-seventh) commercial relief under the 1957

Act : if the valuation is to *net annual value*, that figure is also the rateable value unless the hereditament is entitled to industrial or freight transport de-rating.)

Important Test Cases

Hollingsworth and Company Limited v. Clayton (VO).

Renton and Company v. Clayton (VO).

Wright and Company (Newcastle and Hull) Limited v. Clayton (VO).

Laver and Company Limited v. Clayton (VO).

(5th October, 1960.)

Timber Storage and Drying Sheds at Alexandra and Victoria Docks, Kingston-upon-Hull.

Determination of Kingston-upon-Hull and East Riding (South) LVC that these hereditaments fell to be valued to direct to R.V. under section 22 (1) (b) held to be correct : values agreed.

Appeals dismissed : as these were important test cases, I.R. did not ask for costs.

The premises consisted of timber storage sheds and open yard. The land in each case was leased from the British Transport Commission : the appellants erected their own buildings on the land leased to them and were entitled to remove them on the determination of the tenancy.

The proportion of land to buildings in each of the tenancies was as follows :—

Messrs. Hollingsworth 51 per cent. covered by buildings.

" Renton	86	"	"	"	"
" Wright	57	"	"	"	"
" Arnold Laver	32	"	"	"	"

High grade timber was stored in the sheds and inferior qualities of wood were stacked in the open land surrounding the sheds. It was agreed that the sheds were non-industrial buildings.

For the timber companies it was argued that the open land could be regarded as a "yard" within the meaning of the subsection, or that it fell within the meaning of "other appurtenances thereto."

In the Tribunal's opinion, "yard" must be given the ordinary generally accepted meaning which was taken to be an enclosed ground attached to a house and used with it as a yard was normally used : it was satisfied that none of these pieces of open land was a "yard" within that meaning.

Counsel for the ratepayers referred to *Trim v. Sturminster R.D.C.* (1938) ; *Anderson v. Anderson L.R.* (1895) and *Sinclair-Lockhart's Trustees v. Central Land Board* (Planning and Compensation Reports, Vol. 1, 1949-1951, page 303).

The term "appurtenance" had been the subject of much litigation but in truth it was primarily a question of fact to be decided in accordance with the circumstances of each particular case.

Counsel for the V.O. submitted cogent arguments that the true meaning of the six words "Garden, yard, court, forecourt, outhouse, other appurtenance," should be sought after paying due weight to the governing phrase "belonging to." The concept of dependency must never be lost sight of ; only such land as fulfilled the role of servient tenement to the dominant tenement which was the building in question, should *prima facie* fall within any of the six words.

The Tribunal derived much assistance from *Stansfield v. Stockport and Hyde Assessment Committee* (1939, 31 R. & I.T., page 276). There the Divisional Court accepted the argument that the expression "house" or "building" included any land necessary for its enjoyment.

Another factor which seemed relevant was the definition of "appurtenance" in section 5 of the Rating and Valuation

(Miscellaneous Provisions) Act of 1955, where it is provided that in relation to dwelling-houses, schools, etc., "appurtenances are to be taken to include all land occupied therewith and used for the purposes thereof." This specific inclusion seemed to carry with it the implication that in relation to other hereditaments land may be occupied with and used for the purposes of a building and yet not be one of its appurtenances.

In the case of the hereditaments in this appeal, both the covered storage buildings and the open storage land were used for one broad conjoint purpose of storing timber, but in the Tribunal's view they were independent storage areas. The open land could be used for storage without the covered sheds and *vice-versa*. Either could be conveyed separately for the purpose of storage of timber. In none of the four hereditaments could it have been said that the open storage land was occupied for the purpose of the covered storage buildings. It followed that the Local Valuation Court had come to a correct conclusion.

Wharf not a "Building"

Clayton (VO) v. Good, Havercroft and Company, Limited.
(3rd November, 1960.)

Wharf and Offices at Kingston-upon-Hull.

Decision of Kingston-upon-Hull and East Riding (South). LVC to assess to gross value overruled.

V.O.'s appeal allowed with costs on County Court Scale 4.

The sole issue was whether the hereditament should be assessed to gross value under section 22 (1) (a) of the 1925 Act as the Local Valuation Court decided, or whether it should be assessed direct to rateable value under section 22 (1) (b).

Looked at in the context of the sub-section the Tribunal was of opinion that the "building" must be of a similar character to a house, factory or mill and not merely "that which is built," the definition in the Oxford Dictionary. Applying this test, the wharf was not a "building" within section 22 (1) (a), and the coal storage space and its appurtenant area could therefore be said to be of appurtenance belonging to a building and must therefore be "other land" within the subsection.

This was sufficient to dispose of the appeal, but the Tribunal dealt with other points raised. It was not satisfied that the whole of the area was necessary for unloading at the wharf, and had it found that the wharf was a building, it would not have found that the whole of areas were "appurtenant" thereto. They were required for the purpose of the respondents' business as coal merchants rather than as operators of the wharf.

With some hesitation the Tribunal arrived at the conclusion that the cement mixing plant was a "building" and therefore, if treated on its own, would have been a hereditament to which section 22 (1) (a) applied.

VALUATION OF LICENSED PREMISES

Lease Rent above Rack Rent

Billing (VO) v. Ansells Brewery Limited.

(18th October, 1960.)

Public House and Premises, Griffin Hotel, St. Mary Street, Cardiff.

Assessment of £950 gross value reduced to £740 gross value by East Glamorgan LVC.

Valuation Officer's appeal dismissed with costs at County Court Scale 4 : £740 gross value confirmed.

The owners of the hereditament had at all material times been the National Provincial Bank Limited whose premises

adjoin the Griffin. Prior to the acquisition by Ansells Brewery in 1949 the premises had been let as a free house for a term of four years at £400 a year. In January, 1951, Ansells acquired a new full repairing lease for seven years, from March, 1950, at £400 per year for the first two years and £800 for the remainder of the term. Ansells also paid the bank £1,500 and acquired the right to remove the licence to other premises and to terminate their lease on so doing, on giving three months' notice. It was not disputed that this sum of £1,500 amounted to consideration for the licence. There were *inter alia* provisions for dealing with compensation money or deductions from the rent in the event of the Justice's licence being referred for compensation under the Licensing (Consolidation) Act, 1910. In July, 1956, a new lease was granted for a term of five years from March, 1957, at a rent of £1,300. This also left the lessors responsible for repairs.

The substance of the Appellant's case was that the rent of £800 in the 1951 lease should be regarded as a clear rack rent, one which could be amply supported by further rental evidence and by assessments of licensed premises in the centre of Cardiff, and also by a reasonable estimate of trade. The Respondents contended that the rent of £800 was, due to circumstances influencing the parties to the lease when the rent was negotiated, in excess of a rack rent and that the assessment should be based on a direct approach valuation based on actual trade figures for the property.

Mr. J. L. Anning (Fellow), had accepted the £800 as a true rack rent under the agreement, had added £75 for repairs and a further £90 representing 6 per cent. of the £1,500 said to have been paid for the licence. This gave £965 which he had rounded off to an assessment of £950. He had checked this against an estimate he had made of the trade he would expect at such a house, both an approximation on "beer barrels" and a more detailed valuation to compare with the Respondents' valuation based on consumption of barrelled beer, bottled beer, wines and spirits. He supported these valuations by referring to the assessments levied on a number of houses in central Cardiff, for some of which rental evidence was available. In particular he took for comparison the two nearest licensed premises in St. Mary Street, namely the "Bodega" and the "Cardiff Cottage" (both being on the opposite side of the street), and considered that their assessments supported the valuation he had placed on the "Griffin." The assessment on the "Bodega," which was held on a lease granted in 1946 at a rent of £1,100 per year was £1,200. When he made that assessment he was not aware that Messrs. Ind Coope in taking over the house had paid £5,000 for the assignment of the lease which then had five years to run. Likewise the "Cardiff Cottage," though not rented property, carried a negotiated assessment of £700 which supported his general yardstick of 25s. a beer barrel for houses having a trade (exclusive of wines and spirits) of over 750 beer barrels a year, as in that case the number of beer barrels adopted was only 400. Although Mr. Anning had adopted a brewer's bid of 45 per cent. in the supporting valuation on his estimate of trade which he had submitted at the local hearing he now adopted 50 per cent. on revised trade figures which indicated a substantial drop in the trade in bottled beer and in wines and spirits. He thought the hypothetical brewer tenant would expect to do better and enjoy trade more in keeping with other houses in central Cardiff. Mr. Anning disclosed that of the 4,700 public houses in Wales 145 were rented under post-war agreements. Of these 145, 21 were in county boroughs which contained in all 700 licensed houses and out of those 21, 14 were in Cardiff (where there are

204 licensed houses) and of these, he said, nine carried assessments based on the rents.

For the Respondent brewery company a joint managing director of Ansells Brewery and a director of Ind Coope Limited, explained that before the war Ansells owned only one licensed house in South Wales (through a subsidiary company) but they had been doing a fairly substantial trade with free houses. Towards the end of and after the war they had tried to expand their business. They had bought the business at the "Griffin" to gain representation in Cardiff and to help also in expanding their trade with free houses. They had previously supplied these premises when a free house and during the period of shortage they had tried to extend their business by making beer and sometimes extra spirits available to such houses. The landlords had made it clear to them that they would not allow them to occupy the site indefinitely as it would eventually be required for bank purposes. This did not perturb the Brewery at the time as their main object in going into the "Griffin" was to obtain control of the licence with a view to moving it shortly to better premises. Although they had hoped to move the licence in a few years they had so far been unable to transfer it and their anxiety to keep it in existence on this important site was ample reason for the greatly increased rent which they had agreed to pay in order to do so. The short life foreseen for the "Griffin" rendered uneconomic any ideas for remodelling the interior, and their experience at the "Prince Albert" had shown what a favourable effect on trade modernisation of premises could promote.

Mr. D. L. Beck (Fellow), stated that when the assessment was raised from £500 to £950 at the revaluation he had put forward his valuation of £660 which he still maintained to be correct although the Brewery had not cross-appealed. He explained that licences could not be suspended. The anxiety of the Brewery to enter the district and to maintain their footing was ample explanation of the high rents negotiated which he could not regard, in those circumstances, as other than suspect. He produced a schedule of 40 public houses scattered over the Midlands and South Wales giving their rents and assessments to demonstrate that the assessments were not based on such occasional rental evidence as might be available. Mr. Beck criticised the price per barrel method of valuation and pointed out that it was bound to be inaccurate compared with the direct method valuation applied to trade figures from which it was a rough and ready devaluation for approximate comparison only and even then unreliable. Provided with actual figures of trade he criticised the assessment on the "Bodega" and the apparent lack of cohesion between that and the assessment on the "Cardiff Cottage." He said that from his experience and from the cases to which reference had been made he had come to the conclusion that 42½ per cent. was the fair brewer's bid for the subject property, and the trade figures clearly indicated that the likely maintainable trade would not exceed 705 beer barrels. His experience in a revaluation survey of a widely spaced chain of public houses had confirmed his view that the public house trade was experiencing a general falling off in the consumption of draught beer and prospective tenants could be assumed to have been aware of that trend.

The Tribunal excluded from the sphere of influence the 1957 renewal rent of £1,300 as having been negotiated under conditions which were peculiar and distorting.

Two points drove the Tribunal to the conclusion that the £800 represented more than a rack rent in 1958: the remarkable drop in trade between 1950 and 1958, and the

obsolescence of the building. There was no cause in this case to depart from the normal method of valuation, that is to say the direct method based on the estimated fair maintainable trade. The applicability of this method supplied the main grounds of the case but the principles of the method had not been in dispute.

As to the brewer's bid, the Tribunal adopted Mr. Anning's original figure of 45 per cent. as a fair figure for this old house in a good position. Better use could have been made of the premises and a prospective tenant would have expected to do better out of it. Applying these findings to the figures submitted in evidence the Tribunal found itself in close agreement with the figure for gross value determined by the Local Valuation Court.

Cobden's Hotel at Capel Curig

Walthew v. Tudge (VO).

(14th March, 1960)

Licensed hotel, garage and premises, Cobden's Hotel, Capel Curig, North Wales.

Assessment of £325 G.V., £267 R.V. reduced following ratepayer's proposal, by Caernarvonshire LVC to £274 G.V., £225 R.V.

Ratepayer's appeal dismissed: assessment of £274 G.V., £225 R.V. confirmed.

The appellant ratepayer did not appear but sent as his representative, Mr. Wilfred Eastland, F.A.I., without having made previous application to the tribunal that his case should be presented by a person other than himself, a barrister or a solicitor (rule 36 of the Lands Tribunal Rules, 1956). The ratepayer had also failed to lodge documents in accordance with rule 11, but, having heard submissions, the Tribunal came to the conclusion that the ratepayer's interests would be better served by permitting Mr. Eastland to conduct the case on his behalf than by adjourning.

Cobden's Hotel has a considerable reputation, having been established by the Cobden family in the nineties as a family hotel and rendezvous for sportsmen, to whom it offered varied sporting attractions including the personality of Mr. Frank Cobden, who gave his name to a remarkable university cricket match by performing the "hat-trick" in the last over. The famous (or infamous) ball is still preserved in the hotel! The hotel remained in the hands of the Cobden family until 1953 when it was acquired by the ratepayer. It is one of three hotels in Capel Curig and is rated "2-star" along with Bryn Tyrch. The other hotel is Tyn-y-Coed, rated at "3-star." All three front to the A.5—Holyhead—road, but it is one of the points stressed by Mr. Eastland that Cobden's is on a bend of the road which occupies the attention of motorists, who are apt to overlook Cobden's and slow down at either of the other two.

Mr. Eastland based his valuation on the trading accounts:

1954-55	£5,302
1955-56	6,326
1956-57	4,123
Total	£15,751
÷ by 3	£5,250 average
He divided this average figure into:	
Hotel	2,250
Bar takings	3,000
He arrived at his gross value by taking	
3 per cent. on the bar receipts	90
and nineteen guests (being the average number in the hotel at any time) at £8 per guest per annum	152
Total gross value	£242

The following valuation was put in for the respondent valuation officer:—

Estimated receipts all sources	£9,750
Estimated gross profit	4,725
Less: Estimated working expenses:	
70 per cent., say	3,300
	1,425
Less: Interest on tenant's capital:	
£4,000 at 7½ per cent.	300
Divisible balance	1,125
Less: Tenant's share: 50 per cent., say	575
Available for rent (gross value), rates and water rate	550
Less: (1) Rates at 20s. 10d. in the £ on £234 rateable value	£244
(2) Water rates at 1s. 9d. in the £ on £234 net annual value	£20
Meter rent	1
	£21
	265
Gross value	£285
Rateable value	£234
Say as decision of local valuation court—gross value	£274
Mr. Anning gave corrected figures for the gross takings as follows:—	
	1953-54 1954-55 1955-56
Mr. Anning	£ 4,247 6,326 5,302
Mr. Eastland (as above)	— 5,302 6,326

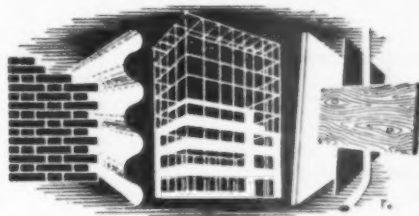
The estimated receipts from all sources (as above) were—for the appeal hereditament £9,750—for Tyn-y-Coed £13,000 and for Bryn Tyrch £12,500. The £9,750 was divided by him, as to bar receipts £3,750 and from other sources, £6,000.

A consideration of the evidence made it quite clear that, while structurally sound and well situated, the premises had been neglected. Mr. Eastland admitted that, while the net profit of £137 19s. 7d. in 1954-55 became a loss of £368 16s. 7d. in 1955-56; if the hotel were in the hands of energetic and knowledgeable management, it could be brought back to a profitable undertaking.

What had to be decided was whether the potentialities in the open market were such as to attract a tenant at a rental related not to the past trading results, but to what was done elsewhere in Capel Curig. The bar trades of all three hotels were to a considerable extent a function of the number of resident guests and if guests were attracted by carrying out the decorative repairs to Cobden's Hotel, there was every reason why the figure of £3,000 for the bar trade—as adopted by Mr. Eastland—should be increased to the estimated £3,750 in Mr. Anning's analysis. There was not much between the parties in the "rental per guests." Mr. Eastland said £8, Mr. Anning £8 2s. 6d., and the totals were £152 and £162 respectively.

The question really resolved itself into whether the present rather forlorn state of the property was to be accepted as its permanent condition or whether in assessing rental value it might be assumed that within the limits of its main structural condition the landlord's hypothetical obligations as to repairs had been carried out. The Tribunal saw nothing which suggested that structural condition was so bad that periodical superficial repairs would be ineffective and in the circumstances the property must be assumed to be in a more or less similar decorative condition to the other two hotels. In the Tribunal's view, the admitted defects and shortcomings of Cobden's Hotel were amply reflected in Mr. Anning's table of comparison and particularly in the estimated bar receipts and it saw no reason for upsetting the local Valuation Court's decision.

A number of valuation cases have been held over to the next issue.



BUILDING AND QUANTITY SURVEYING

A Practical Approach to Estimating and Cost Planning

By RALPH B. PAGE (Fellow)

Mr. Page is Principal Quantity Surveyor to the South-West Metropolitan Regional Hospital Board.

Having read from time to time the articles in *The Chartered Surveyor* and "The Architects Journal," etc., and having become conscious of the need for cost analysis and cost planning in connection with the variety of hospital buildings with which I am dealing daily, I decided to do some research into the existing methods to see how they can be applied to this type of work.

A great deal has been written and said on this subject; so much so that some practising surveyors who, lacking the time to study the mysteries, have not been able to do any research, now find themselves under pressure from their architect clients. These architects, through publicity in the technical press, have now come to expect results from their quantity surveyors, although the experts themselves have not yet been able to produce methods which have proved to be satisfactory in general practice.

Both the R.I.B.A. and the Institution have set up Research Panels, papers have been read at the Institution Headquarters and study groups have been set up in Branches to study the subject. Mr. J. Nisbet (Fellow), in his article in "The Builder," 11th September, 1959, makes a plea for more and more research to be undertaken by full-time research workers financed from various sources, etc., etc. To what end is this tremendous effort to be directed?

In seeking an answer to this question, the logical starting point is to ask what it is that the architect wants. We are fortunate in as much as a pamphlet on this subject has been published by the Institution and this in turn has been examined and explained in detail at various meetings and at cost planning courses. I take these requirements and the questions they raise in the stages in which they are set down.

"The Client's Requirements—"

when the architect and his client are elucidating the client's requirements."

At this stage, no more than general indices such as cube or foot super. costs are required from the quantity surveyor and each practising surveyor has his own historical cost information to enable him to give general answers to these requirements. The client has stated the sum he is prepared to spend and the general outline of his needs. The quantity surveyor can say quickly if the object can be attained and can give a rough idea of the size of the building which can be built within the sum given. A little bit of juggling generally

results in a preliminary solution to the problem.

"The Brief—"

the stage when requirements are agreed, site surveys made, etc., and the architect can begin to consider design possibilities."

The architect will then put pencil to paper in outline only and, if it is necessary, he will take into account special requirements in regard to foundation piling, multi-storey building, type of construction, etc. Here the quantity surveyor should be at hand to answer his questions, again in general terms.

"The Sketch Design—"

when the major planning problems have been solved and the main outline of the design determined, but before any detailed large scale working out has been done."

At this stage, the quantity surveyor comes into his own. With a firm outline or sketch plan at his disposal, without having detailed specification but with a good general idea of the type of construction and standard of finishings required, the quantity surveyor should be able to reconsider the original rough estimate of cost and make a realistic estimate. He should be able to give immediate accurate answers to a dozen different questions on the effect of the cost of the architect's various ideas on types of construction, services and finishes and, if necessary at this stage, of differing layouts within the general plan or alterations to the layout.

"The Constructional Design—"

the stage during which the sketch plans are developed, and working details of types of construction and services are prepared."

The architect now wants ready-reckoner answers to many of his problems on more detailed questions of finishings, services, etc., advice on how to effect economies and on various aspects of distribution of costs in relation to elements or components.

"Contract Documents—"

the stage at which draft working drawings are complete and are being translated into production drawings for tender and contract."

To the quantity surveyor this means preparation of the bill of quantities and contract documents which is outside the scope of this article. At this stage also the quantity surveyor

		Quantity	Unit	Rate	£
			Continued		
10.	Partition walls (including doors, skirtings & decorations). 3" B.B. Plast. 0 2 Enul. 4/6. Sm. dls. sktg.	7619	F.S.	5/10	2223
11.	Windows Std. metal gl. 2 way sold arch A.T. tiles wd. frames.	3360	F.S.	10/4	1736
12.	Doors (in structural walls). Single E.O. Double	5	No. No.	2/12	60
13.	Ground Floor 4" conc. 5" conc. D.P. membrane Thermoplastic tiles	3795	F.S. (Nett)	5/-	950
14.	Upper Floors H. Tile & conc. rified sweat Thermoplastic tiles Plast. soff 0 2 Dist. pr.	3795	F.S. (Nett) F.S. (Nett)	9/3	1755
15.	Roofs Flat		F.S. (Nett)		
16.	Pitched (including ceiling) Flat pitch lightweight steel, felt covered suspended board eq.	4144	F.S. measured flat (Nett)	9/-	1865.
17.	Ducts for services	7590	F.S. of floor area	1/-	380
18.	Staircases Conc. finish Thermo. tile finish	2	No.	2/150	300
19.	Sanitary fittings (including wastes) Ground Floor Upper Floors	7 5	Per average Unit No. No.	2/20 2/25	140 125
			Continued		
					13670

St. Helen Group Office

should be able to confirm his final cost plan.

Now it must of necessity be somewhere within the above stages that the quantity surveyor often does not, at present, give the architect what he needs.

Let us re-examine the various requirements of the different stages. At stages described as "The client's requirements," "the brief" and "contract documents," it is fairly obvious that the quantity surveyor does not need to improve his service, as most practising quantity surveyors have readily available the information that the architect wants or will be able to anticipate his questions and have the necessary information available when asked for.

To re-enact a familiar scene at "sketch design" stage, the quantity surveyor would be called to the architect's office and shown sketch plans of the proposed building. The architect is now full of ideas on the project, with his mind working at high speed envisaging this and that type of construction and alternative layouts; he might even have more than one set of sketch plans for which he wants comparative costs. He may also want to know the effect of different types of construction for the superstructure or for the foundations.

Similarly at "the constructional design" stage he will want to know about the differences in cost of different types of, for example, facing bricks or curtain walling, the effect of pre-cast concrete floors as compared with other types, what type of roof finishings to specify, the comparison of internal wall finishings, etc., etc.

In practice, what happens is that the quantity surveyor cannot answer these numerous questions offhand. The architect, knowing this, discusses these matters in general terms with the quantity surveyor and finishes up by confining his questions to those to which he needs specific answers, as he realises that it all means time and expense for his quantity surveyor in looking into the detailed costs and making calculations to enable a firm answer to be given. At both "the brief" and "the constructional design" stages, he would like to fire a dozen or more questions at his quantity surveyor and he would do so if he thought he could get on-the-spot answers to them. Even though some of the questions would be out-of-date half an hour after he has asked them, nevertheless he would have liked an answer, if he could have got it at once.

As it appears to me this is the crux of the matter. Quantity surveyors at the moment feel that their present methods do not enable them to give as much service to the architect as he would like. From the architect's point of view, if he could have rapid answers to his questions he would have a much closer grip on the cost side of some of the things he would like to do. The quantity surveyor, with the methods he has so far contrived, is unable to give the architect the answers at the time he needs them. For him to promise to look into the questions and phone back the answers several hours (or days) later is very often not good enough. By that time the architect's mind has moved several steps ahead and the information may not then be wanted, or worse still, the architect may have had to manage without it.

Can the quantity surveyor improve his methods so as to achieve the seemingly impossible, becoming at times a walking encyclopedia on costing? It is to this end no doubt that so much emphasis is being laid on cost research and cost planning and it is to find the solution to this problem that all the proposed research is aimed.

In searching for the answer, I have examined what has already been done. So far only two methods of approach have been produced, *i.e.*, the storey-enclosure system and the Ministry of Education system. I have discarded the first as

not meeting with my requirements, and as not giving me the quick reference comparisons which my architects are asking for. The Ministry system, while being on the right lines, I feel is only in part applicable to general practice, although it is undoubtedly providing answers within the limited scope of school buildings. Briefly, this method comprises grouping the building processes in elements related to the superficial area of the floors which can be quickly ascertained by measurement and applied to other buildings of different dimensions. In preparing an estimate or cost plan, the costs of similar elements of previous buildings of a similar nature are applied to the new floor area and the answer is taken to be the estimated cost of the new building. To do this presupposes that we have at hand a large collection of elemental bills of quantities to which we can refer to find one for a similar type and size of building and with the same general construction as that for which we are estimating. The average practising surveyor has not got this library of information available to him and he must begin to build it up, either from analysing standard bills of quantities in his possession or by persuading the contractors to tender on the elemental type of bill of quantities, before he can begin to apply the Ministry method. An alternative is to use figures published in the "Architect's Journal" from time to time, giving feet super. costs for different completed projects. I have tried to do this and find that one can rarely find rates which can be applied to the job in hand. In addition to this it is a wearisome job turning the collection of "Architects Journal" articles to find any one element which might be applicable to the project in hand. Even if one had a library of elemental bills of quantities, I suspect one would find the same difficulty. There can be 15 to 25 different elements to price on one cost plan. I could amplify the differences and shortcomings of this method at length, but briefly it seems to me they all arise from the fact that one is trying to relate to the floor area the elements which have no logical relationship thereto. In practice therefore I find the Ministry of Education method difficult to apply, although I must be fair and say that it has been used successfully by the Ministry where their surveyors have had access to a very large collection of elemental bills for similar types of school buildings throughout the country. It is, I am given to understand, devised primarily to set target figures by elements for the architect before the detail design is started. These targets show the distribution of cost throughout the school buildings and show where, if necessary, adjustments can be made. That it is not practicable for general use in cost planning is evident from the fact that its sponsors are instituting the proposed research programme.

My research into the Ministry and other methods and my experiences in trying to apply them have, however, resulted in my devising a method which is explained here in detail and which is really an application of the Ministry method but bringing in the vertical plane as well as the horizontal, by which means I am able to relate most of the building processes to a logical basic area.

It is a realistic compromise between the long-established but cumbersome methods of the "measured estimate" *i.e.*, approximate estimating on the basis of approximate quantities and its variations, and the recent, but to my mind oversimplified, attempts to relate everything to one basic measurement such as foot super. of floor area.

A system of analysis was devised by Alan W. Davson (Fellow) in 1923 which gave a lead to collating all the information in a bill of quantities into units. This analysis was illustrated in *The Chartered Surveyor* for June, 1959, by

ESTIMATE PRICING CHARTNo. 14 CONCRETE SUSPENDED FLOORSBASIC INFORMATION

In situ slab construction

Reinforced for 50 lb. lead per foot super

Plastered Soffites.

	Distempered soffite			Emulsion Paint Soffite			3 oils Soffite		
	13'/ 15' Span	15'/ 20' Span	20'/ 25' Span	13'/ 15' Span	15'/ 20' Span	20'/ 25' Span	13'/ 15' Span	15'/ 20' Span	20'/ 25' Span
Floor finishes (including screeds)									
1" Granolithic	2/6	9/4	10/2	8/9	9/6	10/4	9/2	10/-	10/10
$\frac{1}{8}$ " Thermoplastic tiles	10/2	11/-	11/10	10/4	11/2	12/-	10/10	11/8	12/6
$\frac{1}{4}$ " Jointless composition	10/5	11/3	12/1	10/8	11/5	12/3	11/1	11/11	12/9
$\frac{3}{4}$ " Terrazzo	13/5	14/3	15/-	13/7	14/5	15/3	14/-	14/10	15/8
$\frac{1}{8}$ " Rubber tiles	13/11	14/9	15/7	14/1	14/11	15/9	14/4	15/5	16/3
$\frac{3}{16}$ " Cork tiles	11/5	12/3	13/1	11/8	12/6	13/4	12/1	12/11	13/9
$\frac{1}{8}$ " Linoleum	10/2	11/-	11/10	10/4	11/2	13/-	10/10	11/8	12/6
$\frac{7}{8}$ " Buff quarries	12/3	13/1	13/11	12/6	13/4	14/1	12/11	13/9	14/7
1" Jap. oak blocks	14/-	14/10	15/8	14/3	15/-	15/10	14/10	15/6	16/4

FIGURE 2

Mr. Cyril Sweett (Fellow), in his article on "Cost Analysis." The difficulty in using this type of analysis for costing planning is that the "units" are too numerous and varied and one must set about making a measured estimate in order to apply the information it provides. In the method illustrated below, the basic information is simplified by being applied to a dimension to which it has a logical relation and therefore greater accuracy.

THE "TWO-WAY METHOD"APPROXIMATE ESTIMATES"The Brief" and "Sketch Design" stages

On examination, it is apparent that the Ministry method of relating elements to the foot super. area of the floors is

practicable in regard to some of the elements.

One "feels" that its application to those elements is accurate, e.g., costs of different floor constructions and finishes. One "feels" equally that to relate such things as partitions and external walls to floor area is inaccurate. This raises the question as to what "basis" it is logical to relate these other elements. From here it is but a short step to the realisation that other elements in a building can be related to the vertical plane. From the following list, it will be seen that most elements can be logically related to either the horizontal or vertical plane, viz. :-

Horizontal Plane

Floors
Roofs

Vertical plane

External walls
Internal walls

ESTIMATE PRICING CHART

No. 7. EXTERNAL WALLS

Basic Information

Flettons in gauged mortar Facings P.C. 350/- per thousand Preliminaries included at 8% Outer London Wage Radius.

Flettons in gauged mortar Facings P.C. 350/- per thousand Preliminaries included at 8% Outer London Wage Radius.		INTERNAL FINISHINGS												
		Cost per foot super all-in												
		Fair face walls painted				Hard wall plastering				Wall Tiling incl. screed				
		Twice Distempered	Two coats Emulsion Paint	Three coats Oil Paint	Patent finish P.C. 15/- yard super	Twice Distempered	Two coats Emulsion Paint	Three coats Oil Paint	Patent finish P.C. 15/- yard super	White Glazed	Cream Glazed	Coloured P.C. 60/- yard super	Terrazzo	1" Oak Panelling
9" Walls in Flettons	Fair face externally	5/2	5/3	5/9	7/1	5/9	5/10	6/5	7/8	11/8	12/5	16/9	11/2	24/10
	Facings P.C. 350/- M	8/-	8/1	8/7	9/11	8/7	2/9	9/3	10/7	14/6	15/3	19/8	14/1	27/4
	Facings P.C. 375/- M	8/2	8/3	8/10	10/1	8/10	8/11	9/5	10/9	14/8	15/5	19/10	14/3	27/9
	External rendering	6/3	6/4	6/11	8/2	6/11	7/-	7/6	8/0	12/9	13/6	16/11	12/3	25/10
11" Hollow wall in Flettons	Fair face externally concrete block internal skin.	4/9	4/10	5/4	6/8	5/5	5/6	6/1	7/4	11/3	12/-	16/5	10/10	25/5
	Facings P.C. 350/- M and ditto.	7/7	7/8	8/3	9/6	8/3	8/4	8/11	10/2	14/1	14/10	19/3	13/8	27/3
	Facings P.C. 375/- M and ditto.	7/10	7/11	8/5	9/9	8/5	8/6	9/1	10/4	14/4	15/1	19/5	13/10	27/5
	External rendering and ditto	5/6	5/7	6/2	8/5	6/2	6/3	6/9	8/1	12/-	12/9	17/2	14/7	25/1
	Fair face externally brick inner skin.	5/2	5/3	5/9	7/1	5/9	5/10	6/5	7/8	11/8	12/5	16/9	11/2	25/9
	Facings P.C. 350/- M and ditto.	8/-	8/1	8/7	9/11	8/7	8/9	9/3	10/7	14/6	15/3	19/8	14/1	27/4
	Facings P.C. 375/- M and ditto.	8/2	8/3	8/10	10/1	8/10	8/11	9/5	10/9	14/8	15/5	19/10	14/3	27/9
	External rendering and ditto.	5/10	6/-	6/6	7/10	6/6	6/7	7/2	8/5	12/5	13/1	17/6	11/11	25/6
13 1/2" Walls in Flettons	Fair face externally	7/4	7/5	8/-	9/3	8/-	8/1	8/7	9/11	13/10	14/7	19/-	13/5	24/4
	Facings P.C. 350/- M	10/2	10/3	10/10	12/1	10/10	10/11	11/5	12/9	16/8	17/5	21/10	17/3	27/10
	Facings P.C. 375/- M	10/4	10/5	11/-	12/3	11/-	11/1	11/8	12/11	16/10	17/7	22/-	16/5	30/-
	External rendering	8/5	8/6	9/1	10/4	9/1	9/2	9/9	11/-	14/11	15/8	20/1	14/6	28/1
15 1/2" Hollow wall in Flettons	Fair face externally concrete block internal skin.	7/-	7/1	7/7	8/11	7/7	7/8	8/3	9/6	13/6	14/3	18/7	13/-	24/7
	Facings P.C. 350/- M and ditto.	9/10	9/11	10/5	11/9	10/5	10/6	11/1	12/4	16/4	17/1	21/5	15/10	29/5
	Facings P.C. 375/- M and ditto.	10/-	10/1	10/8	11/11	10/8	10/9	11/3	12/7	16/6	17/3	21/8	16/1	29/7
	External rendering and ditto.	7/8	7/9	8/4	9/8	8/4	8/5	9/-	10/3	14/3	14/11	19/4	13/9	27/4
	Fair face externally brick inner skin.	7/4	7/5	8/-	9/3	8/-	8/1	8/7	9/11	13/10	14/7	19/-	13/5	24/4
	Facings P.C. 350/- M and ditto.	10/2	10/3	10/10	12/1	10/10	10/11	11/5	12/9	16/8	17/5	21/10	16/3	29/10
	Facings P.C. 375/- M and ditto.	10/4	10/5	11/-	12/3	11/-	11/1	11/8	12/11	16/10	17/7	22/-	16/5	30/-
	External rendering and ditto.	8/1	8/2	8/9	10/-	8/9	8/10	9/4	10/9	14/7	15/4	19/9	14/1	27/8

FIGURE 3

PRELIMINARY COST CHART NO. 1

HOSPITAL BUILDINGS

		Ward Blocks	Geriatric Units	Operating Theatres	Out-patients' Departments	Physiotherapy Units	Spastic Units	Pathological Laboratories	Nurses' Homes	Offices	Boiler Houses	Etc.
Brick superstructure	Foundations (Per Ft. Run)											
	External Walls incl. windows & doors (Per Ft. Sup.)											
	Internal structural walls inc. doors (Per Ft. Sup.)											
Framed superstructure	Steel framework and casing (Per Ft. Sup.)											
	R.C. framework (Per Ft. Sup. floors & roof combined)											
	Curtain walling incl. windows & doors (Per Ft. Sup.)											
Engineering services incl. attendance and profit	Partitions (Per Ft. Super)											
	Ground Floor (Per Ft. Sup.)											
	Upper Floors (Per Ft. Sup.)											
	Roofs, flat (Per Ft. Sup.)											
	Roofs, pitched (Per Ft. Sup. measured flat)											
	Staircases (Per Ft. Sup. of floor area)											
	Sanitary fittings (Per Ft. Sup. of floor areas)											
	Sterilizers, Bed Pan Washers, etc. (Per Ft. Sup. floor area)											
	Laboratory fittings (Per Ft. Sup. floor area)											
	Cupboards, shelves, etc. (Per Ft. Sup. floor area)											
	Heating & H. & C. Water (Per Ft. Sup. floor area)											
	Electrical (Per Ft. Sup. floor area)											
	Ventilation (Per Ft. Sup. floor area)											
	Equipment (Per Ft. Sup. floor area)											
	Builders Work in connection % of Engineering Works											
External Works	Soil Drains Immed. vicinity (Per Ft. Sup. floor area)											
	Rainwater Drains (Per Ft. Sup. roof area)											
	Paths (Immed. vicinity (Per Ft. Sup. Gd. floor)											

FIGURE 4

Horizontal Plane

Service ducts
Floor and ceiling furnishings
Frame construction
Electrical services
Heating services

Vertical Plane

Partitions
Windows
Doors
Wall finishings
Curtain walling

Foundations can be costed per foot run ; sanitary fittings per number.

One's first reaction to this is that it might involve the surveyor in a great deal of additional measuring. In practice, this is not so. In measuring the area of floors, one has to hand the figures for run of foundations and roof areas and also perimeter of external walls by which to multiply the height for external walls. The only vertical element involving additional measurement of any consequence is the partitions. As this element is of primary importance, determining as it does the "density" of the building, the time spent on obtaining the overall area of partitions is well worthwhile. In practice, an experienced quantity surveyor will do this in a few minutes as he will count the number of times the length and breadth of the building are repeated in partitioning and multiply by the storey height.

One has now arrived at the stage where one has set out on an estimate form, a sample from which is given in Fig. 1, the necessary basic horizontal and vertical areas on which the estimate is to be made.

How are these basic areas to be priced? The quantity surveyor has by now a good general idea of the standard of construction and finishing the architect has in mind. If not, he must find out. He then applies an "all-in" rate to the basic areas. The rate applied is a rate built up of all the items in the particular element being priced, e.g., 11-inch external walls would include facings, all labours, etc., such as beam filling and forming openings and including preliminaries, etc., and possibly the cost of windows and doors as well, depending how much time the quantity surveyor has and how approximate he wishes his estimate to be. In this manner the main total is quickly built up.

It is inherent in all estimates that when the main total figure has been arrived at, it is necessary to add to it items peculiar to the project in hand, such as demolitions and site works, restricted access, etc., and these things have also to be taken into account at this stage of the "two-way" method in bringing the estimate to finality as in all others.

For speed and accuracy in this method it is essential to be able to apply instantly the correct rate to the basic area for the particular element. To work up rates from detailed prices in each case would, of course, defeat the whole object, so it is for this purpose that the quantity surveyor will have at hand a series of charts of the type illustrated in Fig. 2. It will be seen that, with such charts built up for all the different

elements, one can immediately pin-point the all-in price one needs for all types of buildings and construction. It is also possible to draw charts to cover diverse purposes. The chart shown in Fig. 4 is particularly related to hospital buildings but it is evident that quantity surveyors could compile their own charts to suit their special requirements, e.g., housing, power plants and associated building, etc.

COST PLANNING

The "Design" Stages

In preparing the cost plan, the quantity surveyor will use a *pro forma* which will be a more detailed form on the lines of the estimate *pro forma*—how much more detailed will depend on the project in hand and the inclination and experience of the quantity surveyor. As an example, the floor areas might be split up into different types of finishing if this is necessary and the partitioning into different forms of construction.

To price these, more detailed and accurate all-in prices are necessary, and these are provided by cost plan charts as illustrated in Fig. 3.

On reflection it will be seen that, with the horizontal and vertical basic measurements at his elbow, his charts in his briefcase and a scale rule in his hand, the quantity surveyor will be equipped to give "ready-reckoner" answers to the architect's questions on the effect on the cost of his project of whatever ideas come into his mind. It appears to me that we are, by this method, able to satisfy the requirements asked for in the Institution paper "What information does the Architect need from the Quantity Surveyor?" in respect of the "sketch design" stage and the "constructional design" stage.

In conclusion, I would like to comment on Mr. Sweett's article on "Cost Analysis" referred to above. On re-reading it, I am left with a feeling that the difficulties of cost planning and cost analysis as examined in great detail by him are so numerous and varied that one cannot possibly hope to cater for all of them. To quote what he says: "It is difficult to think up a method by which all the necessary data can be reduced to a simple statement on a card index." In fact, it is impossible; nevertheless the necessity has arisen to devise a method which will record as much information as possible in a form in which it is readily available for quick application to future projects. It is with this end in mind that the system of charts referred to above has been devised.

As to research, a great deal of work needs to be done initially in compiling the basic estimating and cost plan charts. Once they have been compiled, it is necessary to keep them up to date and to keep abreast of new methods of construction and finishings. To this end, some hard work and research are necessary.

Quantity Surveyors Committee: Extracts from the Minutes

A meeting of the Quantity Surveyors Committee was held at the Institution on 16th November, 1960, and extracts from the minutes are published below.

Quantity Surveyors Triennial Conference: 30th May, 1960

The Sixth Triennial Conference of Quantity Surveyors will be held in London on Tuesday, 30th May, 1960. Further information will be announced as soon as possible.

Report of the Cost Research Panel

The Report of the Cost Research Panel was well received by the Council at their meeting on 14th November, 1960. The Report will be published in the February issue.

Canadian Institute of Quantity Surveyors

The Canadian Institute, in which chartered quantity surveyors were playing a leading part, has been incorporated as a Dominion Corporation, and appears to be making sound progress.

City Press: "Importance of Building Costs"

An article on the work of the chartered quantity surveyor, entitled "The Importance of Building Costs," appeared in "The City Press" for 28th October, 1960.

Professional Indemnity Policies : Nuclear Exclusion Clause

The Committee decided to draw the attention of members to the introduction of this type of clause in certain Professional Indemnity Policies, particularly in the case where members might be concerned with work on nuclear power stations, etc., and that they might be involved in a liability in which their policy would not protect them by reason of the clause, which reads :

" This policy does not cover

(a) loss or destruction of or damage to any property whatsoever or any loss or expense whatsoever consequential loss ;

(b) any legal liability of whatsoever nature directly or indirectly caused by or arising from ionising radiations or contamination by radioactivity from any nuclear fall-out or from any nuclear waste from the combustion of nuclear fuel."

Personal Notes

The Committee congratulated Mr. G. L. Coates on his election as Vice-Chairman of the Educational Policy Committee of the Council, and Mr. Frank Hyams on his election as Vice-Chairman of the North Western Regional Joint Consultative Committee of Architects, Quantity Surveyors and Builders.

Third Course in Cost Research and Cost Planning

Thirty members attended the third course organised in conjunction with the L.C.C. Brixton School of Building, held from 7th-10th November, 1960.

Fifth Officers' Conference : 15th November, 1960

A short oral report on the Fifth Conference between their Officers and the Chairmen and Honorary Secretaries of the quantity surveyors sections of the branches, held on the previous day, was presented. Points arising from the Conference are being considered by the Quantity Surveyors Committee, and the appropriate Standing Sub-Committees.

Middlesex and Urban Essex Branch : Meeting of Quantity Surveyors

At a preliminary meeting of quantity surveyor members of the Middlesex and Urban Essex Branch, held at the Institution on 26th October, 1960, a decision to form a provisional committee and to hold a meeting early in 1961 for members of that Branch was made.

Quantity Surveyors General Meeting, 19th October, 1960

The Committee thanked Mr. K. K. Dale (Fellow) for his paper on "Future Practice and Procedure in Quantity Surveying." The discussion is published below.

Future Practice and Procedure in Quantity Surveying

A paper entitled "Future Practice and Procedure in Quantity Surveying" was presented by Mr. K. K. Dale (Fellow) at a general meeting of quantity surveyors, held on 19th October, 1960. The paper was published in the December, 1960, issue of The Chartered Surveyor and a summary of the discussion which followed is published below.

MR. N. S. FARROW, M.B.E., F.I.O.B., in proposing a vote of thanks to Mr. Dale said that in private practice the quantity surveyor must rely for his work either on architects or on clients. If the quantity surveyor were employed by a public authority he was in many ways in exactly the same position as anybody else working in an organisation ; he had a responsibility and a duty to that authority. Traditionally the quantity surveyor acted impartially between the client and the contractor to assess the value of the work undertaken, and prepare accounts. Mr. Dale had said that a great deal of money could be saved if the quantity surveyor were accepted in that way ; but Mr. Farrow suggested that 95 per cent. of the construction industry would not accept the quantity surveyor in that role, and on every occasion would employ their own quantity surveyor to make sure that the job was being done correctly from the contractors point of view. Quantity surveyors should consider whether in fact they had maintained their independence, at least so far as the construction side of the industry was concerned.

It was right that the client should want to know how much a building would cost but there was a tendency these days for architects and quantity surveyors to try and provide the client with a Rolls-Royce job at Ford Anglia prices.

Mr. Dale had referred to the quantity surveyor being the king-pin, the ideally placed man to direct operations. Mr. Farrow did not believe that was the right role for the quantity surveyor. The profession was the technical accountant of the building industry and was performing, and should perform, a very valuable service in that particular field. Any attempt to assume leadership would be resented by the remaining members of the team. The training of a quantity surveyor was long and arduous, and it did not

give him time to get himself into a position to be able to assume responsibility for directing operations from start to finish.

The paper was intended to be provocative, and had achieved that end admirably so far as he was concerned! It was with pleasure that he proposed a vote of thanks to the author for the time, thought and care which he had put into the preparation of the paper, and for the delightful way in which he had presented it.

MR. A. J. CAPARN (Professional Associate), in seconding the vote of thanks, said that one of the most important matters so far as Juniors were concerned was to try to make more contact with the building owner, to bear in mind their obligations to him, and to aim to serve him in the best possible manner.

MR. R. W. HAYWARD (Professional Associate) said that as a prophet the author had proved his worth, because on the second page of the paper he had entirely covered the précis which the juniors had got out for their residential course to be held from 7th to 9th April, 1961. The author wrote : "It seems probable that we may have to extend our cost studies into the wider sphere of what could be termed 'building economics'." That would constitute the first half of the course, and the second half of the course was covered by the author's third heading under "The Quantity Surveyor's Contribution," that is, "Preparation of tendering documents with speed and accuracy." A debt of gratitude was owed to the author for the publicity!

MR. N. DE ROME (Professional Associate) said that the author had referred to the "gods" of cost planning. There

might well be a danger of these "gods" turning out to be made of tin. At a meeting held a short time ago, an architect had said that the ideal cost plan was when the first programme estimate coincided with the final account. One did not want to under-estimate the value of cost analysis and cost research, but its value could be dangerously over-estimated. What Mr. Dale had said about a specialist within the quantity surveyor's office was the ultimate aim and the obvious answer to cost analysis. It was necessary to cost plan but the members of the profession would be misleading themselves and their clients if they believed that they were able to make accurate forecasts based on information which they knew to be approximate.

Mr. A. J. WILLIS (Fellow) thought that Mr. Dale's suggestion of the quantity surveyor and cost analysis expert working on parallel lines could be taken even further, and he foresaw two separate subdivisions of the Institution. A separate consultant could study drawings and costs of all types of buildings (some arrangement being made for architects to allow full access). Only the very largest firms in private practice could have a specialist on their staff. He had himself recently had the experience of being asked for the cost of buildings of a type quite outside his experience (without any drawings!) and felt that what was wanted was a consultant.

Mr. E. D. JEFFERISS MATTHEWS (Visitor) said that Mr. Dale had made reference to the question of being efficient. It was appreciated that everybody had to increase their efficiency, but the first thing required by the quantity surveyor was efficiency from the architect, and the architects were very conscious of that. If the quantity surveyor thumped the table a little more and sent in his question lists in such a way that it forced the architect to give him the information and to be more efficient, the two professions would get along together far better.

A great deal had been heard of the question of cost consultancy, and in that connection architects were getting a very important service from quantity surveyors. With increased complexities of structures, increased variations in the ways in which things could be put together, the alternative components which could be chosen, and so forth, architects were sometimes in a dilemma as to which to select.

The suggestion that it might conceivably be that the role of the quantity surveyor in the future would be to take on contract administration and be general co-ordinator was intriguing. In his opinion there was something in it from the architect's point of view, and he would give some conditional support to the idea. It was true that at the present time too many people were trying to do too many different jobs in the building industry and there was overlapping. The function of the architect and that of design in its widest sense did put the architect into the leadership of the group of people concerned, but it was difficult to see that the handing over of the administration of a contract need mean that the architects were no longer the leaders.

In an ideal world an additional person to be made contract administrator did not arise, as the man who should be the administrator was the contractor, and there should not be any need for further administration. But it was not a perfect world, and administration had to be superimposed, and it was true that a great many architects' offices were not geared for it to-day.

Mr. R. L. FITT (a representative of the Association of Consulting Engineers) said that he was quite convinced that in building the architect must be the team leader. He was

equally convinced that where the work was primarily of a civil engineering nature, the team leader must be the consulting engineer. It was essential that the member of the team who had planned and designed the structure should be in a position to ensure that what had been planned and designed was actually carried out. The civil engineer was the person who was ultimately responsible to the client for the safety of the structure which was built. Rather than individual members of the team seeking independence the aim should be for increased integration.

Mr. S. VAUGHAN (a consulting engineer) said that in his view, it would be fundamentally against the quantity surveyors' own interests if ever the position arose in which they became the king-pins of building operations. Quantity surveyors were always ready to help both the architects and the engineers, and they stood in a semi-independent position. Therefore, in their own interests, they ought not to urge that their duties be extended to include co-ordination of the work of the architect and the consulting engineers. It was essential in his opinion that this vital work of "co-ordination" should continue to be one of the most important duties of the person in supreme command of the job, that is to say the architect, for projects of an architectural nature and the consulting engineer for projects of an engineering nature. If quantity surveyors undertook these duties, it would put them in a false position, and one in which they would risk losing one of the most valuable assets they possessed—the extreme respect, trust and affection which the professions of architecture and civil engineering had for them at the present time.

Mr. DAVID WOODBINE PARISH (Visitor) said that a factor which seemed to him to be overlooked by the quantity surveying profession was that builders were offering and selling a service in a fluctuating market. Each tender that was submitted involved taking a calculated commercial risk, which included many imponderables which had to be assessed. There was no exact science, which could be applied to pricing a bill of quantities or in the method by which bids for contracts were made. It should be recognised that the unit rates or prices inserted in bills were assessments of future performance based on past experience made by builders in the preparation of lump sum tenders. The individual unit rates could not be construed as an open offer to execute particular types or sections of work at a given price out of context. They were, however, the basis for adjusting additions and omissions on the specific contract to which the relevant bills of quantities applied.

In an ideal world of complete planning in advance, a priced bill of quantities would serve little purpose, once the builder had determined his bid, other than the preparation of valuations. Let there be no doubt at all that there were wide variations in the unit rates inserted by builders in bills of quantities, because of the differing methods adopted in relation to such matters as the recovery of oncosts, plant and machinery charges, supervision and profit. It was unfortunate that there was a school of thought which existed among quantity surveyors, which held that it was possible to extract from a series of differing bills of quantities an exact unit price, which was universally applicable, for a given item of work irrespective of the circumstances involved.

Mr. JAMES NISBET (Fellow) said that he had been trying to form some picture of what the author thought the profession's future was likely to be, and he had gained the impression that the future of quantity surveying was to be merely a repetition of what the profession had been in the past.

Why should he get that impression? It was because the author made the statement that cost research and cost planning was nothing new. Cost planning was, in his view, something new, and it had been devised to help the architect to design a building within a given cost. It was a technique which was trying to bridge the gap between the approximate estimate and the tender. Therefore, it was not replacing the approximate estimate. It had been a major contribution to the profession's improved status with both the client and the architect.

Recent trends indicated that the profession could follow three paths. Firstly, building operations were now often large complex and expensive and a contract had to be planned in considerable detail. Contract planning had to be based on the volume and character of the work to be done. Most of this information was available in bills of quantities but necessarily in the form suitable for contract planning. Furthermore there was a suggestion that the feed back of site costs to the estimator could be improved if the bill was written in another way. Both these points suggested that the bill of quantities could provide a better service to the builder in the future.

Secondly, so much had been written and said about cost advice that there should now be no doubt that this work would become a key activity of the future. The influence of the large building client was only beginning to make itself felt on the profession and two aspects of costing would claim the profession's attention, *i.e.*, how to arrive at a reliable estimate without drawings and how to ensure that when a client set out to spend a certain sum he spent just that sum.

The third path brings the profession to its quasi-judicial duties. In this respect the profession should hope to avoid the need for exercising these duties by adequate preparation of a contract in advance of execution.

Mr. K. K. DALE, in reply, said that most motor-cars had two king-pins, the function of which was to enable the cars

to be steered properly. Nobody would suggest that the car would go provided it had good king-pins. It had to have motive power. The architects and the engineers fulfilled that role in the analogy. He had never suggested that the quantity surveyors should be the leaders. King-pins were not leaders. Co-ordinators were not leaders. In a building project one started off at one level with the architect and he had to spread his tentacles for specialist services, construction, heating, lighting, ventilation, lifts, and all the other component parts. They were channelled down to where they had to be agreed in a bill of quantities. By co-ordination he meant seeing that those things were channelled in the correct way.

He agreed with Mr. Jefferiss Matthews that one should look to the architects for efficiency. Mr. Matthews' advice was that the quantity surveyors should in fact push the architects and make them supply the sort of information that was needed. Probably the truth of the matter was that the quantity surveyor, being a modest person and dependent to a large extent on the goodwill of architects for getting work, was afraid to push the architect in case he did not get the next job!

The architect was beset by so many calls these days that he could not do the job that he wanted to do as efficiently as he would like. It was too complex, and the quantity surveyor could help him. He could chivvy the consulting engineer so that he would provide the architect with information, and other services could be rendered by him as a co-ordinating specialist.

He had not referred to quantity surveying in connection with civil engineering largely because there was a time when it was a touchy subject. There was a feeling—probably quite erroneous—that civil engineers did not think much of quantity surveyors. The latter would be delighted to do more civil engineering work.

Law Reports on Building Cases

1. REFERENCE TO ARBITRATION

A. E. Farr v. Ministry of Transport [1960] 1 W.L.R. 956 [1960] 3 All E.R. 88. Buckley, J.

Facts :—The plaintiffs (Farr) had made a contract to carry out certain works of road construction in the Form of the Institution of Civil Engineers, 4th edition. The general conditions of contract of that Form provided in clause 66 that the engineer should settle disputes which might arise, and that if either of the parties to the contract was dissatisfied with the decision of the engineer the dispute might then at the instance of that party be referred to an arbitrator.

The right to make such reference was qualified within the clause by the following words :—

"Such reference except as to the withholding by the engineer of any certificate . . . shall not be opened until after the completion or alleged completion of the works unless with the written consent of employer and the contractor."

During the progress of the contract the plaintiffs claimed payment for certain excavation works, and the engineer rejected the claim and stated that the plaintiff's claim should be submitted after the completion of the works.

The plaintiffs then gave notice requiring their claim to be referred to arbitration, as provided in clause 66.

Held : That when the engineer rejected the plaintiff's claim, that was a "withholding by the engineer of any

certificate," and as clause 66 provided that such a withholding could be referred to arbitration before the completion or alleged completion of the works, the notice of the plaintiffs requiring the claim to be referred to arbitration before the completion of the works was a good notice.

NOTE : The R.I.B.A. Form of Contract contains a similar term in these words :—

"Such reference except on article 3 or article 4 of the foregoing articles of agreement or on the question whether or not a certificate has been improperly withheld or is not in accordance with clause 24 of these conditions or on any dispute or difference under clause 25 of these conditions, shall not be opened until after the completion or alleged completion or abandonment of the works, unless with the written consent of the employer or the architect on his behalf and the contractor."

The intention clearly is that disputes referring to the appointment of the architect or surveyor (articles 3 and 4), interim certificates (clause 24) and fluctuations (clause 25A) may be dealt with as they arise, since clearly they will affect the day to day running of the contract, but other matters which have no such affect should wait until the end of the contract.

2. EXTRAS NOT CONTEMPLATED

Peter Kiewit Sons Company of Canada Limited v. Eakins Construction Limited [1960] 22 D.L.R. (2d) 465

In the Supreme Court of Canada.

Locke, Cartwright, Abbott, Martland and Judson JJ.

An appeal from the British Columbia Court of Appeal, which had allowed an appeal from the trial judge.

Facts :—The respondents (Eakins) made a lump sum sub-contract with the appellants (Kiewit) to drive some of the piles of a new bridge which the appellants were constructing at Vancouver harbour. Before the work began the engineer required a different and more expensive type of pile driving. The respondents, before starting the altered work, correctly pointed out to the engineer that the work they were now required to do was not an extra contemplated by the contract, or the original contractual work, but substituted work which they were entitled to refuse to do. The engineer disputed that contention, and was wrong in so doing. He ordered the respondents to proceed, and they did the substituted work under protest.

Held : (Cartwright J. dissenting)—that, except in so far as the work done included extras, only the lump sum provided by the contract was recoverable. The original contract had not been replaced by an implied contract for the more expensive type of pile driving ordered, with a claim for such work based on a *quantum meruit*. If the respondent sub-contractors were correct in stating that the work ordered was not contemplated by the contract, they should have refused to do it unless and until a fresh contract was made. If the contractor had refused to make a fresh sub-contract, the respondents could have sued for damages for breach of contract.

Judson J. (delivering the majority judgment)—

"How can it be found that the contract ceased to be applicable? It did not cease to be applicable by consent of the parties and the case is not one where

some supervening event or fundamental change in circumstances rendered further performance impossible or radically different from the contractual obligation : see *Davis Contractors Limited v. Fareham U.D.C.* (1956) A.C. 696."

Cartwright J. (dissenting) considered that the appeal should be dismissed as the engineer persisted in ordering the work to be done after the respondents had correctly pointed out that such work was entirely outside the contract and would expect to be paid properly for it. In those circumstances the law implies an obligation to pay.

NOTE 1 : This case is an example of extras contemplated by the contract and those not so contemplated. In the case of contemplated extras, the contractor must do as ordered, or he is in breach of contract. He is then entitled to payment. In the R.I.B.A. form of contract such payment is regulated by the express terms of the contract. Where extras are not contemplated, the contractor can refuse to do them. If he does do them he is entitled to be paid for them as contemplated extras. But where, as here, work is substituted for lump sum contract work and the contractor could refuse to do it, he is only entitled to the original lump sum unless he makes a fresh bargain as to the price, or unless part of such substituted work (as in this case) could be said to be extras in any event or either sense.

NOTE 2 : We consider the majority decision correct. There is no scope for an implied consent where the parties are expressly differing on the point in issue. It would be otherwise where there is no existing contract and one party announces his terms and the other, after disputing them, tells him to proceed. The question in each case is to ascertain the basis on which the parties proceed. One factor for consideration is the existence of express contractual rights.

3. MISTAKE IN TENDER

Imperial Glass Limited v. Consolidated Supplies Limited [1960] 22 D.L.R. (2d) 759

In the British Columbia Court of Appeal.

Bird, Coady and Sheppard JJ.A.

Facts :—A sub-contractor asked the appellants (Imperial Glass Limited) to supply Twin-Seal glass. The appellants then asked the respondents (Consolidated Supplies Limited), the manufacturers, to quote. Clerks to the respondents then negligently calculated the total square footage at 202.62 instead of 2062.2, and the respondents based their offer on that mistake. A servant of the appellants, on receipt of the quotation, knew a mistake must have been made, but, not considering it his duty to point it out, based a quotation to the sub-contractor on the respondent's quotation, and a contract was in due course made between the appellants and the respondents based on the respondent's mistaken quotation.

Held : (Allowing the appeal) that the mistake was unilateral and only in the motive or reason for making the offer. There is no ground for remission for unilateral mistake in the motive or reason for an offer unless such mistake was induced by the offeree, or the offeree had a duty to reveal the mistake, and such a duty did not normally exist where the offeree had not induced the mistake. *Bell v. Lever Brothers, Limited* (1932) A.C. 161 applied; *Solle v. Butcher* (1950) 1 K.B. 171 distinguished on ground that the mistake in that case was mutual.

Coady J.A. (giving the judgment of the Court)—

"I cannot under the circumstances of this case hold that the conduct of the appellants, which may be open to question on moral or ethical grounds, amounted to fraud. While the appellant knew of the mistake, it was not a mistake induced by any misrepresentation of the appellant. It was a mistake of the respondent arising from its own negligence or carelessness. The respondent cannot be relieved from the consequences of that mistake."

NOTE : It is very easy for the Court or arbitrator to find in cases such as these that the conduct of the offeree induced the other party to enter into the contract in ignorance of the mistake. In such an event the contract will be set aside. In this case the offeree had done absolutely nothing except to accept the vendor's quotation knowing it must be wrong, so the judgment of the trial judge (for the respondents) was not upheld. Even so this is a very borderline case, and might be upset on appeal on the ground that the appellants were inducing the mistake by quickly snapping up the mistaken offer when they knew of the mistake. Had the quotation contained the erroneous calculation on which it was based, the decision would certainly have been the other way. A supplier could protect himself by a special condition that he was entitled to charge the price ruling at the date of supply.

4. BAD WORKMANSHIP

Borough of Stratford v. J. H. Ashman Limited [1960] *New Zealand Law Reports*, 503

Court of Appeal for New Zealand: Gregson P. North and Cleary, JJ.

Facts: The defendants contracted to do building work for the plaintiffs, the general terms being in the standard N.Z.I.A. form (which terms are very different from the R.I.B.A. form). By clause 9 of the standard terms the work was to be done to the satisfaction of the architect. By clause 34 there was an arbitration clause, but only for settlement of disputes and differences where settlement was not provided for by other clauses of the contract. There was no power in clause 34 to reopen certificates and a provision to that effect in an earlier edition of the form was not in that used by the parties to this case. Before the retention moneys were released, a floor showed bad workmanship and the parties agreed to remedy the defect by cleating under the floor. This was not done, but the defendant's foreman unintentionally caused A, the defendant's managing director, to believe it had been done. A. assured the architect to that effect, who then issued a certificate marked "Final," for the release of the retention monies. The certificate was not in the proper form for a final certificate as contemplated by the contract. The plaintiffs attempted to set aside the certificate for fraud. They also contended it was not a final certificate and could be reopened. The trial judge negatived fraud by A. and the foreman.

Held: The certificate was final as it expressed the final satisfaction of the architect with the work. It could not be reopened except for fraud or misconduct by the architect as he was acting in the capacity of arbitrator when he gave it.

Mistake and innocent misrepresentation were not good grounds for setting the certificate aside. As the certificate could not be reopened under the arbitration clause, and as fraud had been negatived on the facts, the claim failed.

Cleary J., giving the reserved judgment of the Court, relied on *Armstrong v. Strain* (1952) 1 K.B. 232 to show that a company cannot be guilty of fraud where innocent statements by two servants have combined to make a false representation. The knowledge of the true facts by one and the misrepresentation of the other cannot be added together to make fraud. Further, expression of satisfaction in a certificate called "Final" is the equivalent of a conclusive final certificate. Neither a final certificate nor one expressing satisfaction could be reopened under the arbitration clause in the N.Z.I.A. form of contract, unlike that in the R.I.B.A. form (as to which see *Windsor Rural District Council v. Otterway* (1954) 1 W.L.R. 1494). Where a certificate is intended to embody a decision final and binding on the parties, it is a binding award between them.

NOTE: We agree. The case is of some importance in that it reminds practitioners that there are many building contracts drawn by solicitors, and others, which do not incorporate an arbitration clause enabling final certificates and other awards of architects to be reopened. Where an architect makes an award he cannot be sued in negligence. He is only liable for fraud or misconduct.

REX PROCTER (Fellow), A.R.I.B.A., and
NORMAN F. STODDON, B.A. (Jurisprudence)
(Oxon.), B.C.L.

Recent Developments in Quantity Surveying

The following is a report of a Course held at the Institute of Advanced Architectural Studies, York, 28th October to 1st November, 1960.

The theme of this course was to bring under review fresh approaches being made to the problem of improving both the quality and scope of the services offered by the quantity surveying profession to clients, architects and builders. Methods were outlined which result in a building of the proper function, of balanced quality and at a final cost very close to the long range forecast given by the quantity surveyor at the time of the architect's briefing. These techniques are the now familiar ones of cost planning and cost control, and several of the speakers are well known for their pioneering work in this field. Among the other very useful items discussed were the education and training of future entrants to the profession; improved methods of presentation of contract documents; the more analytical and careful planning by some contractors; some very interesting recent law cases concerning building contracts; the working-up of bills of quantities by automatic processes thereby releasing

staff for the important task of research into the wider aspects of quantity surveying; and principles of management and work study.

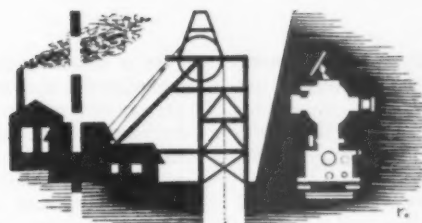
Questions put to the speakers by those attending promoted interesting and stimulating discussion although frequently the time allotted for this was too brief. It is perhaps regrettable that there was not greater representation of architects and builders (perhaps the title of the course was at fault here), as greater efficiency in the building industry as a whole would surely result from the ability of the various professions and the contractors to understand each others problems.

Although there was similarity of purpose amongst the speakers—that is to improve the conditions prevailing at present, there were disparities and sometimes contradictions between them and it is for this reason that these courses should remain post-qualification so as not to confuse those still training.

Manchester Building Centre

The Manchester Building Centre held its first formal function in October of last year. Sir Basil Spence, as President of the Building Centre, London, paid an official visit to the northern Centre and among the guests were the Lord Mayor of Manchester, the President of the Institution and representatives of other interested professional bodies.

Mr. Haydn Smith, Chairman of The Manchester Building Centre, expressed the hope that the Centre would become the complete focus for all those connected with building in the north of England. The Centre, at 115, Portland Street, Manchester, 1, is open daily from 9.30 a.m. to 5 p.m. (12 noon on Saturdays).



LAND SURVEYING AND MINING SURVEYING

Off-Shore Mineral Exploration

by R. H. T. GARNETT, B.Sc.(ENG.), A.R.S.M., F.G.S.

The following paper was presented at a general meeting of mining surveyors held in Nottingham on Saturday, 26th November, 1960.

INTRODUCTION

Apart from a few notable exceptions, the majority of the mineral deposits at present being worked throughout the world were discovered as outcrops at the surface during the early part of the 20th century. The likelihood of a prospector discovering further outcropping deposits decreases with each succeeding year if such areas as the Arctic lands and equally inaccessible regions be excluded. The days of the old-time prospector are quickly departing and his place is now being taken by another new mining specialist—the mineral exploration engineer. D. Williams states that “the finding of new deposits, mostly concealed beneath a thick mantle of overburden, is becoming ever more difficult without recourse to scientific prospecting based on imaginative geological reasoning, aided by aerial photography and modern techniques of geochemical and geophysical exploration.” This is the role of the prospecting engineer who brings into the industry entirely new techniques and new ideas. Such a man must not allow his imagination to be limited by existing conceptions. For instance, prospecting engineers have, in the past, thought of overburden as a mantle of rock overlying the mineral deposit. It is better thought of as a covering through which the deposit is detected and which must be penetrated in the majority of cases before recovery of the deposit may commence. On this basis, overburden may refer either to the land surface or to the oceans and if the discovery of further mineral deposits is to continue at a pace demanded by ever-increasing world mineral consumption then the prospecting engineer must regard both the land and the seas as potential exploration areas.

The first major advance comes with the realisation of this fact and with the first attempts to probe beneath the waters which cover 70.8 per cent. of the earth's surface. A growing interest in the potential of the sea has been aroused through the science of oceanography. Although the latter is not a new subject, it is only now that its importance is being fully recognized and several international bodies are at last being created to foster research. The primary interest of such organisations is the fauna and flora of the sea from which man may one day reap his harvests of food. Little thought has so far been given to the mineral potential of the sea; in solution, as sediments, or beneath the sea floor.

One of the first indications of the scale of the so far unexploited deposits came with the off-shore oil drilling around the coast of the U.S.A. and in 1945 the President of the United States claimed as additional national territory an area four times the size of Texas; the sea-bed, subsoil, and waters of the continental shelf as far as the drop-off line which is defined as a depth of 600 feet where the shelf commences to decline into the depths. The distance to the drop-off line is variable but in the off-shore oil producing areas is as great as 200 miles. Since that time, off-shore activity in the mining industry has increased considerably and many countries have laid claim to the waters and deposits of their continental shelves.

Off-shore deposits, with the exception of minerals held in solution, may be classed as existing in the form of either sediments on the sea-bed or deposits beneath the latter. In both cases the exploration and development may be the result of continuing development beyond the coast of deposits that have been proved and worked on land. On the other hand, eventual production may be the result of prospecting in virgin off-shore areas when no signs of mineralisation exist upon the adjacent shore. Whatever the history the engineer must develop a prospecting technique and a method of recovery.

PAST AND PRESENT OFF-SHORE MINING ACTIVITY

The mineral potentialities of the sea are now being recognised for the first time although records of off-shore activity are provided by both Pausanius and Aristotle, who mention the existence of small mines for gold and copper which penetrated for a distance under the sea, the former being eventually flooded by the gods as an act of revenge upon man for his impudence in trespassing. In that once great mining field of the south-west of England are to be found the disused tin-copper mines of Botallack and Levant in the St. Just field. The workings of the latter extended 5 000 feet out to sea from shafts on the cliffs and to a depth below the sea-bed of over 2,000 feet. The Wherry Mine at Penzance is another example. Here small veins of tin exposed in a dyke at low water were first worked around 1700. After several attempts a shaft was sunk to a depth of 26 feet

and surrounded by timber walls above the sea-bed to prevent the entry of the water at the high tide when the collar of the shaft was 20 feet below the water surface. This enterprising mine, however, was finally brought to a standstill in 1792 when a vessel broke loose from its moorings during a storm and smashed into the headframe of the shaft.

Such attempts at submarine mining did not pass unnoticed. In 1818 Hawkins wrote "Perhaps when the veins are exhausted, which lie within the boundary of our sea-girt peninsula, we shall turn our attention to those that extend in the same direction beneath the bed of the ocean; nor, when we consider the increasing depth of our mines, can that period be very distant. Our submarine works will then form a new epoch in the history of mining, and by calling forth still greater exertions of skill and industry, demonstrate in a more striking manner, the powers of the human intellect. . . ." Outside the mining region of the South-West of Cornwall it has not been uncommon for seams of coal to be worked well beneath the sea and when Hawkins was writing in 1818 coal mines in Whitehaven had long extended their workings beyond the coast.

The first major advance was made in 1922 when off-shore drilling for oil commenced in Venezuela and by 1929 wells were being sunk in 60 feet of water. Off-shore exploration for oil, as opposed to drilling, was commenced on the Louisiana continental shelf in 1938 and by 1947 the first off-shore oil was being produced. Ten years later the number of off-shore wells drilled and completed was 665, according to Crosthwaite, and up to 1959 there were 75 companies engaged in off-shore oil exploration in the U.S.A. alone with a total investment of £714 million. Elsewhere, oil companies have been equally active with the result that oil was first struck in the Persian Gulf in 1951. Off-shore drilling commenced in Borneo in 1954, and in Trinidad in 1955.

In 1949 the Humble Oil Company were drilling for oil in 50 feet of water and at a distance of 7 miles from the coast of Louisiana when 200 feet of sulphur-bearing limestone were intersected. On the basis of eight drill intersections of the deposit at an average depth of approximately 2,000 feet recovery of the sulphur is planned by the Frasch process at a cost of 30 million dollars. Although the boundaries of the deposit have not yet been delineated on two sides, the proved deposit is already the third largest in the United States.

For many years now the existence of manganese nodules on the ocean floors has been known, but has caused little industrial interest owing to the fact that land supplies fulfil all requirements. However, it has recently been found that such nodules contain, in addition to 20 per cent. manganese, an average of 0.5 per cent. of nickel, cobalt, and copper. J. L. Mero has evaluated the cost of dredging operations in depths in the region of 4,000 feet and concludes that a deep-sea hydraulic dredge would lead to mining costs of the order of 3 to 5 dollars per ton.

Sand and gravel has not, until recently, been recovered in any tonnage from beyond the low water mark, but in 1955 thousands of tons of sandfill for a highway were pumped from the floor of New York Harbour, and in Toulon cement for naval bases has been mixed with sand dredged from the sea-bed following the direction of divers. In the Bristol Channel 1½ million tons of sand and gravel were taken from the sea bed during 1959. Dredging is by suction pump to a maximum depth of 50 feet of water and up to a distance of 12 miles from the shore. At other localities around the coasts of Britain large tonnages are being recovered from the sea-bed annually.

In a similar manner the attention of the tin dredging companies is now being focused upon the potentialities of the sea-bed sediments. In Indonesia off-shore surveys in conjunction with the drilling of bedrock and the overlying strata have been conducted to facilitate the exploration and recovery of submarine tin-placers. According to van Overeem the bulk of the tin in this field is found in the submerged valley floors where sediment thickness varies between 0 and 150 feet beneath a water depth of from 10 to 90 feet. As the world's alluvial deposits are gradually exhausted companies must consider not only the possibility of prospecting for the original tin lodes from which the alluvial tin was derived but also of investigating the off-shore sediments.

Iron ore exposed on Bell Island in Eastern Canada is now being worked from below the sea, and production is coming from points approximately 3 miles off-shore and 2,000 feet below sea-level following the development of the bedded deposit in that direction. J. C. Pierce states that production has now attained the figure of 2,800,000 tons annually, and that the same company is working coal in Nova Scotia 4 miles off-shore and 2,000 feet below sea-level. Recent papers have also stressed the need for off-shore exploration in the United Kingdom by the National Coal Board. In the past the seawards exploration of coal seams worked upon the land and dipping under the sea has always been by underground driving and boring, but recent off-shore operations in the coalfields of Northumberland and Durham, and the Lothians and Fife have been very successful. They have shown that there is only one reliable method of proving the off-shore extensions of coal seams; by drilling through the sea-bed combined with geophysical devices.

An ever-increasing number of organisations are conducting research upon sea-bed geology and the improvement of techniques whereby the necessary information is made available. Extensive studies by a number of the American Universities are being made in many branches of marine geology, especially off the Californian coast. Marine geology is now taking its rightful place in British Universities, especially Bristol, Liverpool, and Imperial College (London), and recent work upon the projected Channel Tunnel has been followed by complete geological studies of the English and Bristol Channel sea-beds.

OFF-SHORE EXPLORATION

In the exploration of off-shore deposits it is essential that the amount of information obtained concerning all aspects of the deposit should not be less than the information required concerning a land deposit before its development is commenced. Apart from economic factors, the majority of the decisions regarding the eventual working of a deposit are based upon geological knowledge and it therefore follows that it is necessary to obtain the maximum possible geological information before proceeding further.

With respect to sea-bed sediments, the geophysical methods of exploration will provide information regarding the depth of overlying water, the depth of the sediment, and the configurations of the bed-rock. Details of the tonnage, distribution, grade, and positioning of the economic mineral within the sediments can be obtained only by drilling, coring, dredging and diving. Also to be considered are the distance of the deposit from the nearest land, the mining and dressing methods, transportation costs, and the market potential.

Lode and seam deposits present more serious problems but in a like manner such factors as the depth of water to the bed-rock, the depth of the deposit below the bed-rock, and



The St. Agnes Mining District showing the extent of completed off-shore exploration

the major geological structures may be investigated by geophysical methods. The above, and additional information such as the nature of the deposit, the nature of the bed-rock, the configuration and limits of the deposit, the minor geological structures, and the expected tonnage and grade (where applicable) may be derived from a combination of methods involving geophysics, drilling, coring and diving. In addition to the economic factors that have to be considered when examining sediment deposits the problem of underground exploitation of the mineral lodes from the adjoining land must be examined. The iron ore deposit mentioned earlier is worked by room-and-pillar methods and a minimum cover of 200 feet exists between the workings and the sea-floor bed-rock. Depending of course upon the nature of the overlying strata, it would appear that 200 to 250 feet should be the minimum cover allowed for undersea mining. A recent case of workings close to the sea-bed has been investigated by the writer in Cornwall. The workings of the Levant Mine were known to have approached to within only 30 feet of the sea-bed during production and it was feared that since the closure of the mine in 1930 the sea had entered into the workings causing the flooding. A team of divers under the direction of the writer made a detailed examination of the sea-bed. Guided by fluoresceine which had been introduced into the workings through one of the mine shafts, the divers discovered a breach in the sea-bed coinciding exactly with abandoned stopes located from old mine plans. It is evident that the formation of a cavity in the sea-bed was assisted by the percolation of water through the overlying rock and by the pressure differences existing between the once air-filled workings and the sea-bed at a depth of 45 feet below water surface.

GEOPHYSICAL METHODS OF EXPLORATION

For all off-shore work it is necessary to know the depth of water at all points. Depth soundings were originally made with a weighted line or wire until the development of the echo-sounder. An impulse is beamed from the boat on the surface, is reflected by the sea-bed, and is received again by the boat, the time interval being proportional to the depth of water. The instrument exists in many forms but the most important is the continuous recording type in which all depth measurements are automatically recorded on a continuous sheet which eventually takes the form of a profile, often exaggerated, of the sea-bed.

A development of the latter is the inclined echo-sounder which, by the same principle, permits the beaming of the energy to the sea-bed at a pre-determined angle. Small scarps on the sea-bed therefore provide a strong reflection as opposed to surfaces sloping away from the beam which give very little reflection. The results, when continuously recorded, take the form of an inclined view of the sea-bed enabling the observer, in the absence of any sand covering, to interpret within limits the characteristics of the sea-bed outcrops located. This instrument has been used with success recently in both the English and Bristol Channels.

By replacing the intermittent, high-frequency source of the echo-sounder with a low-frequency sound source under water a penetration of the sediments and bed-rock has been achieved. Such an instrument, known as the sparker, continuously records echoes reflected from a large number of structures and produces a record of both the sea-bed profile and the major geological structures underlying the bed-rock.

The sparker has achieved results in water depths of 2,400 feet and sea-bed penetrations of 1,500 feet in lesser depths.

Major geological structures are also revealed by the use of the gravimeter by which precise measurements are made of the variations in the force of gravity at fixed points throughout an area and interpretations based upon the resulting gravity contour map. An investigation of this nature was made in the Persian Gulf by Cousteau on behalf of an oil exploration company by lowering the gravimeter to the sea-floor and recording the measurements in the boat above. In a similar manner measurements may be made of the vertical and horizontal components of the earth's magnetic field and since rocks of differing types possess varying magnetic susceptibilities, indications may be obtained of the changes in rock type at depth. The magnetometer may be employed for off-shore purposes in either an airborne survey or a sea survey in which the instrument is selectively towed behind a boat or installed upon the sea-bed.

Upon the principle of the different speeds of energy through varying rock types a charge of explosive may be detonated upon the sea surface and the echoes from structures beneath the sea-bed received at a series of equally-spaced recorders on the surface, with the time interval between initiation of the energy and its receipt being measured. This technique has a wide application in all forms of off-shore exploration.

SEA-BED SAMPLING METHODS

All off-shore geophysical methods are incomplete if the necessary petrological and mineral grade information cannot be supplied. Off-shore drilling furnishes sub sea-bed details and, although a costly operation, it has been used extensively in the oil industry. The National Coal Board have employed drilling in their off-shore work and it will in the future be utilised to a far greater extent in the search for metalliferous deposits. However, it is at the moment limited to the region 100 to 150 feet of water depending upon the conditions.

Samples of sea-bed sediments may be obtained by the use of various coring devices. First developed in 1876, the modern corer takes the form of core tubes of lengths of 10 to 30 feet and a diameter of a few inches. Weights are fitted to the corer and it is dropped vertically through the water so that upon impact with the sea-bed a sample of the sediment is forced into the tube. The corer is then brought to the surface and the sediment core retrieved. By this means cores of lengths of up to 17 feet have been obtained. To obtain a greater penetration of the sea-floor use may be made of water pressure and explosives. In this manner cores of 70 feet have been taken. Corers have been adapted for any depth of water and are chiefly designed to provide samples of the sediments, but cores and samples can also be obtained from the bed-rock if it is sufficiently soft. The method fails when the hardness of the bed-rock prevents the entry of the cutting edge of the corer.

Dredging of sediment and bed-rock samples is possible from all depths. Extremely strong equipment is necessary and by measuring the pull exerted upon the dredge winch it is possible to predict the nature of the sea-bed; whether there is rock outcrop or sand. By dislodging pieces of rock from outjutting ledges, the dredge obtains a sample of the bed-rock and by a series of traverses the operator may determine the boundaries of a sea-bed outcrop. During work conducted by the writer in Cornwall the same principle was applied by trailing a small grappling iron behind the diving boat. By the use of the above techniques sea-bed samples were dredged from a depth of 19,900 feet in as early

as 1901. The deepest bottom samples so far obtained are from a depth 34,000 feet in the Philippine Deep.

Closely allied with bottom sampling are techniques of underwater photography. The first underwater photographs were obtained in 1893 and since that date it has become possible to take sea-floor photographs by remote control. The camera may be lowered to the sea-bed upon a device by which it is triggered off at a certain distance from the bottom, depending upon the expected underwater visibility. The apparatus may include artificial lighting, a compass, and a current direction recorder. 25,000 feet is the maximum depth from which a photograph of the sea-bed has so far been obtained. Underwater television is now a practical proposition and was used with success when locating the wreck of the Comet airliner off Elba and in searching for the submarine *Affray* in 1951. It is capable of being used in several hundreds of feet of water and appears to have a better definition than the human eye.

THE USE OF DIVERS

During a voyage of the research ship *Calypso* in 1954 the corer was dropped in 40 feet of water in order to obtain a sample of the bed-rock. When the line was hoisted aboard the corer was missing. It happened that the boat was equipped with divers who decided to retrieve the corer from the sea-floor. A dive was accordingly made and it was found that the corer was bent into a Z-shape. To discover the reason the divers dug into the shallow covering of sand and found that the bed-rock was composed of granite. They returned to the surface and dived again fully equipped with hammers and chisels, and it was not long before samples of the rock were handed to the geologist on board the boat. This simple story illustrates the weakness of all corers and the way in which diving geologists may be integrated into a programme of off-shore geological exploration.

The oil companies rapidly appreciated the possibilities afforded by this new sampling technique and in the Persian Gulf an extensive geological survey of the sea-bed was carried out with a ten-man diving team in combination with a marine gravimeter, samples of the bed-rock being taken from the floor in water depths of 200 feet. The Humble Oil Company established a diving team for underwater geological work off Texas.

All the methods employing geophysics, drilling, coring and dredging are remote-controlled means of obtaining information and samples. In any science the direct method of observation is always desirable where there is no danger of injury to the observer. Apart from sinking and cross-cutting out to an area beneath the sea the geologist has no method of direct observation of the petrology and structures. The sea-bed, however, is accessible to man in the form of divers, but the latter have only very rarely been employed in the past owing to their extremely limited mobility under water and the art of diving has been very much confined to professionals. Since the development of the aqua-lung in 1943 by J. Y. Cousteau, the diver is no longer dependent upon the surface for his air supply and also possesses complete mobility when in the water since his natural positive buoyancy is neutralised by the use of suitable weights. The aqua-lung provides the equipment which enables man to make a safe examination of the sea-bed, provided that there is a complete understanding of the possible dangers involved. The limit to which a dive may be made with an aqua-lung is 300 feet and a geologist can be quickly-trained in its use to a workable depth of 150 feet.

This means that where the sea conditions permit, a geologist

may make a series of dives and conduct a complete study of the sea-bed *in situ*. It is now possible to collect samples of sediment by auger, sample the bed-rock where exposed or covered by only a thin mantle of sediment, and make any necessary observations upon the minor geological structures exposed.

Already several extensive surveys have been completed by diving geologists. During 1953 diving teams mapped 2 square miles of the sea-bed of part of the continental shelf on the north side of San Nicolas Island, California. With the geologists diving in pairs it was found possible to obtain all the necessary information and samples from a depth of 50 feet with a dive of an average duration of 14 minutes. In France, a geological survey of the sea-bed of the Bay of Mont-Saint-Michel was completed during 1955. The work was undertaken to supply information for future harbour constructions and a team of divers was employed. The method may also be applied to inland waters and part of the bed of Lake Norra Dellen in Sweden has been mapped by a diving geologist and the information gained correlated with mapping already conducted on the surrounding land. Depths of 60 feet were exceeded in this work.

Meanwhile work has continued in the U.S.A. and geologists are now diving to study sediment formation, the mechanism of underwater erosion, and to carry out extensive underwater mapping. Dugan refers to the existence of the Geological Diving Consultants Inc., who, by 1956, had made approximately 5,000 dives with the specific purpose of obtaining geological information. Records show that the average duration of a dive is 15 minutes to a mean depth of 55 feet. The team of divers, which consists of three geologists, makes an average of nine dives a day.

In the United Kingdom the aqua-lung's usefulness was quickly appreciated by the marine scientists and it is now regularly used for the study of marine biology and related subjects. The aqua-lung was first used for geological purposes in the English Channel, but the work suffered from the fact that personnel, untrained in geology, were employed. During 1959 an expedition from Imperial College, London, spent two months in the Azores Islands and the writer, as a member of this expedition, devoted the time to developing a technique of underwater geological mapping with an aqua-lung in conjunction with echo-sounding and surveying methods. This work was continued in Cornwall during 1960 when the writer was assisted by five divers in making a survey of the geology of the sea-bed for an area of 2 square miles off the coast between St. Agnes and Perranporth.

The same principles apply to geological mapping underwater as to mapping on the land surface, but the technique varies according to the prevailing conditions. With good underwater visibility the geologist may swim along the exposed rock contacts or the boundaries of the sea-bed outcrop with the diving boat following his movements. In the conditions usually existing in the United Kingdom the visibility is the limiting factor in all the work and it is possible for the diver to make only a series of spot dives. The underwater geological map is therefore compiled by interpolation from a large number of spot samples and observations of the structure. The diver is also limited in his work by physiological factors. Owing to his susceptibility to pressure the maximum depth to which he may dive is 300 feet using present equipment. This means that a rock sample may be obtained by a geologist from a maximum depth of 300 feet but a more realistic figure of 150 feet should be regarded as the maximum routine working depth.

In areas of good underwater visibility it is advantageous to provide the diver with a means of rapid preliminary

exploration of the sea-bed. This is best undertaken with an aqua-plane which can also satisfy the further requirements of precise position control and communication between the diver and the diving boat. Towed by the diving boat, the aqua-plane is simply a small underwater glider upon which the diver lies full-length. The general depth and direction of movement are decided by the speed and course of the diving boat, but a lesser amount of control is also possible by the diver. For physiological reasons the maximum gliding depth for long durations is limited to 30 feet. Several unsatisfactory attempts have been made by amateurs to develop a successful aqua-plane, but it requires a professional engineer, possibly a specialist in aeronautics, to solve the serious design problems.

In common with other branches of geology, it is essential to record immediately the vast amount of observed detail, for observations concerning a studied and sampled outcrop are easily erased from the diver's mind during his ascent to the surface. It has therefore been found advisable to supply the diver with an underwater writing pad and this method works successfully. However, there are times when physical discomforts or dangers distract the diver from the laborious recording of all the detail. In such cases some form of simple throat microphone adapted for underwater use could be employed to advantage. The diver would be able to register immediately through a tape-recorder all the observed details. Such an aid would also reduce the effect of the dangers to human life that may be encountered during diving.

Where the bed-rock is covered by sediment it is frequently impossible for the geologist to obtain a rock sample by digging through the sediment. The development of a small drill which could be lowered to the sea-bed from the diving boat and be controlled by the diver would provide a great advance in the efficiency of sampling. The drill should be capable of penetrating the sediments and of obtaining a short core of the bed-rock. A further application of an underwater drill would be in the sampling of economic sediments, since the present estimation of the grade of sea-bed sediments is very liable to errors.

Although the aqua-lung diver is at present limited to a maximum depth of 300 feet a large proportion of the continental shelf may be explored by this means. Further experiments on gaseous breathing mixtures and increased knowledge of the long-term physiological effects of diving may in future extend the range.



A diver surfaces following the completion of the sampling operation. The cliffs of Cligga Head are shown in the background

The sparker has achieved results in water depths of 2,400 feet and sea-bed penetrations of 1,500 feet in lesser depths.

Major geological structures are also revealed by the use of the gravimeter by which precise measurements are made of the variations in the force of gravity at fixed points throughout an area and interpretations based upon the resulting gravity contour map. An investigation of this nature was made in the Persian Gulf by Cousteau on behalf of an oil exploration company by lowering the gravimeter to the sea-floor and recording the measurements in the boat above. In a similar manner measurements may be made of the vertical and horizontal components of the earth's magnetic field and since rocks of differing types possess varying magnetic susceptibilities, indications may be obtained of the changes in rock type at depth. The magnetometer may be employed for off-shore purposes in either an airborne survey or a sea survey in which the instrument is selectively towed behind a boat or installed upon the sea-bed.

Upon the principle of the different speeds of energy through varying rock types a charge of explosive may be detonated upon the sea surface and the echoes from structures beneath the sea-bed received at a series of equally-spaced recorders on the surface, with the time interval between initiation of the energy and its receipt being measured. This technique has a wide application in all forms of off-shore exploration.

SEA-BED SAMPLING METHODS

All off-shore geophysical methods are incomplete if the necessary petrological and mineral grade information cannot be supplied. Off-shore drilling furnishes sub sea-bed details and, although a costly operation, it has been used extensively in the oil industry. The National Coal Board have employed drilling in their off-shore work and it will in the future be utilised to a far greater extent in the search for metalliferous deposits. However, it is at the moment limited to the region 100 to 150 feet of water depending upon the conditions.

Samples of sea-bed sediments may be obtained by the use of various coring devices. First developed in 1876, the modern corer takes the form of core tubes of lengths of 10 to 30 feet and a diameter of a few inches. Weights are fitted to the corer and it is dropped vertically through the water so that upon impact with the sea-bed a sample of the sediment is forced into the tube. The corer is then brought to the surface and the sediment core retrieved. By this means cores of lengths of up to 17 feet have been obtained. To obtain a greater penetration of the sea-floor use may be made of water pressure and explosives. In this manner cores of 70 feet have been taken. Corers have been adapted for any depth of water and are chiefly designed to provide samples of the sediments, but cores and samples can also be obtained from the bed-rock if it is sufficiently soft. The method fails when the hardness of the bed-rock prevents the entry of the cutting edge of the corer.

Dredging of sediment and bed-rock samples is possible from all depths. Extremely strong equipment is necessary and by measuring the pull exerted upon the dredge winch it is possible to predict the nature of the sea-bed; whether there is rock outcrop or sand. By dislodging pieces of rock from outjutting ledges, the dredge obtains a sample of the bed-rock and by a series of traverses the operator may determine the boundaries of a sea-bed outcrop. During work conducted by the writer in Cornwall the same principle was applied by trailing a small grappling iron behind the diving boat. By the use of the above techniques sea-bed samples were dredged from a depth of 19,900 feet in as early

as 1901. The deepest bottom samples so far obtained are from a depth 34,000 feet in the Philippine Deep.

Closely allied with bottom sampling are techniques of underwater photography. The first underwater photographs were obtained in 1893 and since that date it has become possible to take sea-floor photographs by remote control. The camera may be lowered to the sea-bed upon a device by which it is triggered off at a certain distance from the bottom, depending upon the expected underwater visibility. The apparatus may include artificial lighting, a compass, and a current direction recorder. 25,000 feet is the maximum depth from which a photograph of the sea-bed has so far been obtained. Underwater television is now a practical proposition and was used with success when locating the wreck of the Comet airliner off Elba and in searching for the submarine *Affray* in 1951. It is capable of being used in several hundreds of feet of water and appears to have a better definition than the human eye.

THE USE OF DIVERS

During a voyage of the research ship *Calypso* in 1954 the corer was dropped in 40 feet of water in order to obtain a sample of the bed-rock. When the line was hoisted aboard the corer was missing. It happened that the boat was equipped with divers who decided to retrieve the corer from the sea-floor. A dive was accordingly made and it was found that the corer was bent into a Z-shape. To discover the reason the divers dug into the shallow covering of sand and found that the bed-rock was composed of granite. They returned to the surface and dived again fully equipped with hammers and chisels, and it was not long before samples of the rock were handed to the geologist on board the boat. This simple story illustrates the weakness of all corers and the way in which diving geologists may be integrated into a programme of off-shore geological exploration.

The oil companies rapidly appreciated the possibilities afforded by this new sampling technique and in the Persian Gulf an extensive geological survey of the sea-bed was carried out with a ten-man diving team in combination with a marine gravimeter, samples of the bed-rock being taken from the floor in water depths of 200 feet. The Humble Oil Company established a diving team for underwater geological work off Texas.

All the methods employing geophysics, drilling, coring and dredging are remote-controlled means of obtaining information and samples. In any science the direct method of observation is always desirable where there is no danger of injury to the observer. Apart from sinking and cross-cutting out to an area beneath the sea the geologist has no method of direct observation of the petrology and structures. The sea-bed, however, is accessible to man in the form of divers, but the latter have only very rarely been employed in the past owing to their extremely limited mobility under water and the art of diving has been very much confined to professionals. Since the development of the aqua-lung in 1943 by J. Y. Cousteau, the diver is no longer dependent upon the surface for his air supply and also possesses complete mobility when in the water since his natural positive buoyancy is neutralised by the use of suitable weights. The aqua-lung provides the equipment which enables man to make a safe examination of the sea-bed, provided that there is a complete understanding of the possible dangers involved. The limit to which a dive may be made with an aqua-lung is 300 feet and a geologist can be quickly-trained in its use to a workable depth of 150 feet.

This means that where the sea conditions permit, a geologist

may make a series of dives and conduct a complete study of the sea-bed *in situ*. It is now possible to collect samples of sediment by auger, sample the bed-rock where exposed or covered by only a thin mantle of sediment, and make any necessary observations upon the minor geological structures exposed.

Already several extensive surveys have been completed by diving geologists. During 1953 diving teams mapped 2 square miles of the sea-bed of part of the continental shelf on the north side of San Nicolas Island, California. With the geologists diving in pairs it was found possible to obtain all the necessary information and samples from a depth of 50 feet with a dive of an average duration of 14 minutes. In France, a geological survey of the sea-bed of the Bay of Mont-Saint-Michel was completed during 1955. The work was undertaken to supply information for future harbour constructions and a team of divers was employed. The method may also be applied to inland waters and part of the bed of Lake Norra Dellen in Sweden has been mapped by a diving geologist and the information gained correlated with mapping already conducted on the surrounding land. Depths of 60 feet were exceeded in this work.

Meanwhile work has continued in the U.S.A. and geologists are now diving to study sediment formation, the mechanism of underwater erosion, and to carry out extensive underwater mapping. Dugan refers to the existence of the Geological Diving Consultants Inc., who, by 1956, had made approximately 5,000 dives with the specific purpose of obtaining geological information. Records show that the average duration of a dive is 15 minutes to a mean depth of 55 feet. The team of divers, which consists of three geologists, makes an average of nine dives a day.

In the United Kingdom the aqua-lung's usefulness was quickly appreciated by the marine scientists and it is now regularly used for the study of marine biology and related subjects. The aqua-lung was first used for geological purposes in the English Channel, but the work suffered from the fact that personnel, untrained in geology, were employed. During 1959 an expedition from Imperial College, London, spent two months in the Azores Islands and the writer, as a member of this expedition, devoted the time to developing a technique of underwater geological mapping with an aqua-lung in conjunction with echo-sounding and surveying methods. This work was continued in Cornwall during 1960 when the writer was assisted by five divers in making a survey of the geology of the sea-bed for an area of 2 square miles off the coast between St. Agnes and Perranporth.

The same principles apply to geological mapping underwater as to mapping on the land surface, but the technique varies according to the prevailing conditions. With good underwater visibility the geologist may swim along the exposed rock contacts or the boundaries of the sea-bed outcrop with the diving boat following his movements. In the conditions usually existing in the United Kingdom the visibility is the limiting factor in all the work and it is possible for the diver to make only a series of spot dives. The underwater geological map is therefore compiled by interpolation from a large number of spot samples and observations of the structure. The diver is also limited in his work by physiological factors. Owing to his susceptibility to pressure the maximum depth to which he may dive is 300 feet using present equipment. This means that a rock sample may be obtained by a geologist from a maximum depth of 300 feet but a more realistic figure of 150 feet should be regarded as the maximum routine working depth.

In areas of good underwater visibility it is advantageous to provide the diver with a means of rapid preliminary

exploration of the sea-bed. This is best undertaken with an aqua-plane which can also satisfy the further requirements of precise position control and communication between the diver and the diving boat. Towed by the diving boat, the aqua-plane is simply a small underwater glider upon which the diver lies full-length. The general depth and direction of movement are decided by the speed and course of the diving boat, but a lesser amount of control is also possible by the diver. For physiological reasons the maximum gliding depth for long durations is limited to 30 feet. Several unsatisfactory attempts have been made by amateurs to develop a successful aqua-plane, but it requires a professional engineer, possibly a specialist in aeronautics, to solve the serious design problems.

In common with other branches of geology, it is essential to record immediately the vast amount of observed detail, for observations concerning a studied and sampled outcrop are easily erased from the diver's mind during his ascent to the surface. It has therefore been found advisable to supply the diver with an underwater writing pad and this method works successfully. However, there are times when physical discomforts or dangers distract the diver from the laborious recording of all the detail. In such cases some form of simple throat microphone adapted for underwater use could be employed to advantage. The diver would be able to register immediately through a tape-recorder all the observed details. Such an aid would also reduce the effect of the dangers to human life that may be encountered during diving.

Where the bed-rock is covered by sediment it is frequently impossible for the geologist to obtain a rock sample by digging through the sediment. The development of a small drill which could be lowered to the sea-bed from the diving boat and be controlled by the diver would provide a great advance in the efficiency of sampling. The drill should be capable of penetrating the sediments and of obtaining a short core of the bed-rock. A further application of an underwater drill would be in the sampling of economic sediments, since the present estimation of the grade of sea-bed sediments is very liable to errors.

Although the aqua-lung diver is at present limited to a maximum depth of 300 feet a large proportion of the continental shelf may be explored by this means. Further experiments on gaseous breathing mixtures and increased knowledge of the long-term physiological effects of diving may in future extend the range.



A diver surfaces following the completion of the sampling operation. The cliffs of Cligga Head are shown in the background

UNDERWATER MAPPING IN CORNWALL

In July, 1960, a team of divers devoted three weeks to underwater geological mapping in the south-west of England. The method of mapping by means of the aqua-lung was perfected and, under the direction of the writer, a detailed geological examination of part of the sea-bed was completed. A total of six divers operated from a small boat and mapped 2 square miles between St. Agnes Head and Cligga Head. The divers worked on the sea-bed in pairs, obtaining a sample and a photograph of each outcrop located. The detection of areas of possible outcrop was effected by interpretation of an Admiralty bathymetric chart illustrating the "topography of the sea-bed." Greater detail was obtained by traversing with a small portable echo-sounder. An aqua-plane was also used and a diver was towed underwater for distances of up to half-a-mile noting the occurrence of sea-bed outcrops.

Where samples of the sea-bed and photographs were to be obtained two geologists always dived together. With a mean diving depth of 55 feet it required an average of only 10½ minutes underwater to complete all the necessary work.

The bed-rock was found to outcrop over approximately 40 per cent. of the sea-bed examined. This figure varied and was influenced by the weather conditions. The coastline was bordered by a belt one-quarter of a mile wide in which all the bed-rock was covered with sand. Nevertheless, the overall frequency of outcrops in the prospected area was greater than that on land. Apart from the cliff section, very few exposures exist inland.

All the outcrops located on the sea-bed were of schists or "killas" as it is commonly referred to in the south-west of England. Variations were detected in the degree of alteration of the "killas" and the aureole of metamorphism, as mapped on the land, was successfully traced out to sea for a distance of 1 mile.

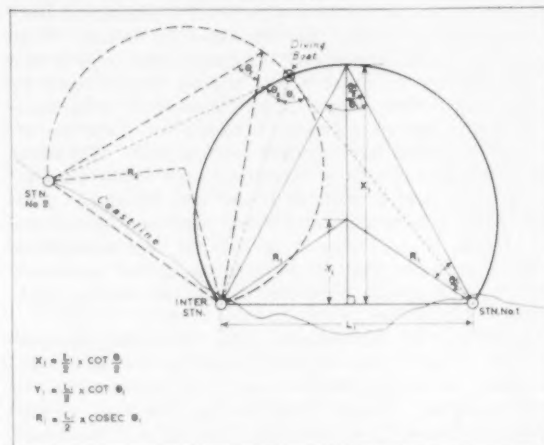
SURVEYING TECHNIQUES

When the boat from which operations are being conducted is within sight of land its position may be fixed by intersection from survey stations upon the coast. Although accurate, this method suffers from the disadvantages that at least two observers are required upon the land, and the engineers on the boat, unless equipped with radio, are ignorant of their exact positions until they return to their shore base. A less accurate method which eliminates these difficulties consists of taking bearings to survey stations on the coast and plotting the position of the boat on board by graphical methods.

In all off-shore work, the geologist must know the position of the boat as accurately and as quickly as possible. Where the land features can be seen clearly the best method is the use of sextant charts. These are based on the principle that any point on a circle passing through two other points subtends a constant angle θ at those points which may represent survey stations erected upon the coast. A series of circles of varying diameter representing different values of θ are constructed through the two survey stations. From the diving boat, the observed angle θ_1 is measured by a sextant and the position of the boat is then known to be somewhere on a given circle passing through the two survey stations. In the same manner the angle θ_2 to two further stations, one of which may be common to the first pair, is measured. The position of the boat is therefore fixed by the intersection of the two circles.

In practice, mutually and easily visible coastal survey stations are first erected. Four pairs of selected stations sets of circles corresponding to varying values of θ are plotted on a plan. This constitutes the sextant chart from which the

position of the boat may be determined in any part of the exploration area. At any position a minimum of two pairs of survey stations must be visible from the boat. On board the boat readings are taken of θ_1 and θ_2 with the sextant and the position of the boat is immediately determined by the intersection of the corresponding circles or by interpolation between them when necessary.



The principle of the sextant chart

For the exploration work in Cornwall during 1960 such a sextant chart was constructed. To cover the total diving area of 2 square miles seven survey stations were established by triangulation and resection from the existing ordnance survey stations. From the seven stations eight sets of circles were constructed for variations in θ of 1-degree between 30-degrees and 150-degrees. The maximum distance between any two survey stations from which a set of circles was constructed was approximately one mile.

At the limit of the diving area, one mile from the shore, the distance between the circles represented 150 feet. At any point in the area a minimum of three sets of circles could be utilised for the position fixing. A distance of one mile from the shore was the greatest distance at which the position of the boat could be determined with sufficient accuracy. This limit was imposed by the prevailing visibility and sea conditions which prevented a reliable reading of θ . The effects of the sea swell upon the 14-foot boat which was used throughout the work were found to be considerable. With a larger diving boat the limit of 1 mile could be extended.

For off-shore exploration when easily visible points on the coast may be fixed, the sextant chart technique is recommended. It may be adapted for rapid work by determining θ from compass bearings to the survey stations, but more accurate fixes will be obtained by using a sextant. The sextant chart method is now used for harbour construction work where there is land-locked water. Although it can be employed on a straight coastline it is more applicable to use on water surrounded on two or three sides by the land, such as an estuary. The method is widely employed by the Admiralty.

When the boat is out of the sight of land the difficulties encountered in fixing the position of the boat become more numerous and less easily overcome. The methods employed include dead reckoning, astronomical fixes, radar, and Decca. In the past a large amount of scientific work has been completed without accurate positioning. This work is of little value without an accurate and readily available positioning

technique. Recently the situation has improved with the development of many electronic devices now in use for maritime navigation.

The above methods supply the operator with the position of only the boat, and it is then the responsibility of the surveyor to determine the position of the diver relative to the latter. The importance of the positioning of the diver depends upon the accuracy with which the position of the boat is being determined at the time and upon the area of the sea-bed covered by the geologist in a single dive from the anchored boat. During the work conducted in Cornwall the position of the boat was fixed to the nearest 100 feet. Owing to poor underwater visibility of less than 10 feet and the dangerous sea conditions the geologist descended down either the anchor line or a vertical shot-line beneath the boat. When a descent was made down the anchor line the surveyor knew the length of the anchor line in use and the depth of the water was measured with the echo-sounder. The bearing along the anchor line was taken with a compass and an estimate of its inclination was provided by the diver as a check. The surveyor was therefore able to calculate the position of the diver relative to the boat provided the former did not leave the immediate vicinity of the bottom of the line. With improved underwater visibility the writer has employed a further method. Sea-bed sampling points at distances of up to 50 feet from the line have been fixed by taping from it and reading the bearing to the line with an underwater compass. This method is important in underwater archaeological investigations where extreme accuracy is necessary. One may imagine in the future, under conditions of suitable underwater visibility, adaptations of standard surface surveying techniques in the form of underwater plane-tableing, chaining and offsetting.

When the diving conditions are sufficiently favourable to allow the diver to be completely independent of the diving boat, as opposed to making use of a safety line, full use cannot be made of the diver in geological mapping, for no device has yet been developed which accurately tracks the diver underwater from the diving boat. The ideal method would provide a continuous record of the diver's position combined with the automatic recording of all his observations by an underwater microphone and would greatly increase his efficiency.

EXPLORATION IN THE UNITED KINGDOM

The writer is particularly concerned with the exploitation of tin-copper mineralisation in the south-west of England. For centuries deposits have been worked from the land in this region and to a very limited extent from beneath the sea during the 18th and 19th centuries. The mineralisation is closely related to the intruded granite and in plan shows a marked association with the land exposures of the granite. The land surface and the ground beneath has been extensively explored with the result that many hundreds of mines have been opened. At one time Cornwall was the world's major producer of both tin and copper. Exploration has never extended beyond the low water mark and the mines that have been worked beyond this limit, such as Botallack and Levant, have been developed by underground exploration in the direction of the sea from already active mines on the land. Workings in the remainder of the mining areas in this region of England have ceased abruptly below the low water mark. This was a result of the limitations of the mining methods in use during the times when the mines were in production. It is most unlikely that mining areas which have yielded large tonnages during the 19th century when worked beneath the

land should suddenly become uneconomic below the coastline. Bearing in mind all the factors influencing the formation of such mineral deposits, it may be assumed that areas of economic mineralisation as proved from the land will continue in area and in depth irrespective of the existence of the sea. They may be expected to continue in the same manner as their counterparts, the boundaries of which have been determined as existing entirely beneath the land surface.

The limit to which divers may be employed for off-shore geological exploration around the Cornish coasts can be represented by a line drawn around the coast at a distance of about 2 miles from the low water mark. The area of Cornwall is approximately 1,390 square miles and the additional area included by the 2-mile limit is 440 square miles, increasing the total area of Cornwall by 32 per cent. Only part of this area is worthy of mineral exploration since the majority is well outside the present known area of mineralisation. The area to the west of a line drawn through Newquay and Truro and extended to the south coast must be considered as worthy of off-shore investigation. The area of the land surface to the west of this line, excluding the Scilly Isles, is approximately 440 square miles. Enclosed between the low-water mark and the 2-mile line is a total area of 240 square miles. Thus, by including the off-shore areas the total prospecting ground in West Cornwall is increased by 55 per cent.



The increase in prospecting ground in Cornwall produced by the inclusion of the off-shore areas to a distance of 2 miles

The aim of preliminary exploration in the south-west of England is to determine the configurations of the granite batholith at depth; a factor which is important in the localisation of mineralisation. Geophysical surveys will be necessary, supported by detailed geological mapping of the sea-bed, to determine the petrology, minor structures, and degree of metamorphism of the country rocks into which the granite has been intruded. This combination necessitates a survey boat capable of being fitted with the required geophysical equipment and of carrying a geological diving

team. The boat would operate within the 2-mile limit but would venture further out to sea as required.

The selection of suitable areas is only one of the problems confronting any mining company wishing to prospect in this country. Companies are deterred from exploring or opening new mines by both the capital risks and the system of taxation of metalliferous mines which can be unfavourable compared with taxation in other countries. Nevertheless, efforts must be made by those concerned in all branches of the industry to develop further the methods of off-shore mineral exploration not only for application in the United Kingdom but for use in all countries with an interest in the future of their mining industries.

ACKNOWLEDGEMENTS

The work on underwater geological exploration employing aqua-lung divers has been made possible by the financial support of the Imperial College Exploration Board under the Chairmanship of Professor H. H. Read.

Advice and assistance has also been very generously provided by Mr. J. S. Sheppard, O.S.E., of the Department of Mining, and by Professor D. Williams of the Department of Mining Geology, Royal School of Mines, Imperial College.

REFERENCES AND BIBLIOGRAPHY

The following is a list of works of reference. Some are referred to in the text of the article.

- Beckmann, W. C. "Geophysical Surveying for a Channel Tunnel." *The New Scientist*, 24th March, 1960.
 Beckman, W. C., Roberts, A. C., and Luskin, B. "Sub-Bottom Depth Recorder." *Geophysics*, 24, 749, 1959.
 Brooks, W. H. "Off-shore Boring in Search of Coal." *Journal of the Association of Mining, Electrical and Mechanical Engineers*, Vol. 40, No. 473, March, 1960.
 Cram, I. H. "Review and Appraisal of Off-shore Operations." *Proceedings American Petroleum Institute*, 1955, 35 (IV), 90-3.
 Dill, R. F. "The Study of Sea Floor Environments by Free Diving Geologists." Paper read at the International Geological Congress, Mexico, 1956.
 Dill, R. F., and Others. "Underwater Mapping by Diving Geologists." *Bulletin of the American Association of Petroleum Geologists*, Vol. 38, No. 1, Jan., 1954.

- Dill, R. F., and Shumway, G. "Geological Use of Self-Contained Diving Apparatus." *Ditto*, Vol. 38, No. 1, Jan., 1954.
 Drysdale, W. S. "Firth of Forth Seismic Refraction Survey." *Transactions, Institute Mining Engineers*, Vol. 115, Part 6, March, 1956.
 Drysdale, W. S., Marsh, F., and Armstrong, G. "Off-shore Boring." *Ditto*, Vol. 117, Part 4, Jan., 1958.
 Ewing, C. J. C., and Francis, E. H.:
 (1) Nos. 1 and 2. "Offshore Borings in the Firth of Forth." (1955-56.)
 (2) No. 3. "Off-shore Boring in the Firth of Forth." *Bulletin Geological Survey G.B.*, No. 16, 1960.
 Garnett, R. H. T. "Underwater Geological Exploration." *Royal School of Mines Journal*, 1960.
 Graindor, Maurice-J. "sur la Presence de Gros Blocs Encastres dans les Sables du Golfe Normanno-Breton." *Extrait des Comptes rendus des seances de l'Academie des Sciences*, seance du 22 decembre, 1958.
 Graindor, Maurice-J. "Une Methode de Geologie Sous-Marine." *Revue de Geographie Physique et de Geologie Dynamique* (2), Vol. 2, Fasc. 1, pp. 29-34, Paris, 1959.
 Grindrod, J. "An Off-shore Sulphur Mine." *The Mining Magazine*, September, 1960.
 Hawkins, J. "On Submarine Mines." *Transactions Royal Geological Society, Cornwall*, No. 1, Vol. 1, 1814, pp. 127-142.
 Hickling, H. G. A. "Prospects of undersea coalfield extension in the North-East." *Transactions Institute Mining Engineers*, 1949-50, 109, 659.
 Mero, J. L. "The Mining and Processing of Deep-Sea Manganese Nodules." *Institution of Marine Resources*, 1st Jan., 1959.
 Nemmers, R. J. "Tunnel to Tap a Coalfield." *The Compressed Air Magazine*, Vol. 63, Aug., 1958, No. 8.
 Pierce, J. C. "Mining Iron Ore under the Sea." *Ditto*, Vol. 62, Feb., 1957, No. 2.
 Redaelli, Leonardo L. "A Petrological Investigation in Lake Norra Dellen by means of Frog-Man Equipment." *Sveriges Geologiska Undersokning*, Vol. 50, Ser. C, No. 548, 1956.
 A. J. A. Van Overeem. "Sonic Underwater Surveys to Locate Bedrocks off the Coasts of Biliton and Singkep." *Geologie en Mijnbouw—39e Jaargang*, pp. 464-471, Oct., 1960, Special Edition.
 Williams, D. "Mineral Exploration." *Proceedings Geological Association*, Vol. 70, Part 2, 1959, pp. 125-57.
 "An Off-shore Sulphur Mine." *Mine and Quarry Engineering*, April, 1960.
 "Off-shore Boring in the Firth of Forth." *N. C. B. Bull. Production Department Information Bulletin No. 56/172*.
 "Sea-bed Sampling for the Channel Tunnel Survey." *Research and Application No. 12*, 1960. Issued by Wimpey Central Laboratory.
 "Submarine Exploration for Oil." A Symposium by members of B.P. Exploration Co., Ltd. *Journal Institute of Petrol*, Vol. 45, Sept., 1959, No. 429. (Crothwaite)

Ordnance Survey Maps and Plans

NEW POPULATION DENSITY MAP ISSUED

The Ordnance Survey have published a map on the scale of ten miles to one inch showing by means of layer colouring the density of population of most of England and Wales at the 1951 census. The map is based on information available only in the county volumes of the census, the first of which appeared in 1953 and the last in 1955.

The information on the one-inch sheets for the whole country has been reduced to a scale of 1/625,000 or about ten miles to one inch for the map which has now been published. It will eventually comprise two sheets, sheet one, now being printed, covering Scotland and Northern England as far as Westmorland and North Yorkshire, and sheet two, now published, covering the remainder of England and Wales.

The main visual effect produced by the southern sheet is the contrast between the large groups of towns with densities of 400 or more persons per square mile and the "dense rural" category which covers much of the English lowlands, as well as the fertile parts of South-West England, South-West Wales, Anglesey, and coastal areas of North Wales. The principal urban concentrations show up well. Among them are Greater London, the West Midlands, an almost continuous area east of the Pennines from Bradford and Leeds in the north to Derby and Nottingham in the south, a similar area covering most of South Lancashire from east of Manchester through Liverpool to the Wirral peninsular the mining valleys and large seaports of South Wales, Bristol, and Bath, and an area of the South Coast from Poole to Seaford, broken only by the more sparsely populated New Forest.

The map (price 5s.) is obtainable from Ordnance Survey agents and leading booksellers.

CURRENT NOTATION PRACTICE

New Editions. The edition of a map or plan is indicated by a letter printed in the bottom left-hand margin of the sheet. The year of publication to which the letter applies is shown in the publication footnote which is printed in the bottom margin of the sheet.

Reprints. Maps and plans are periodically reprinted for the purpose of replenishing stocks, and the opportunity is then taken to correct any known errors which appeared on the previous printing.

Facsimile reprinting of a map or plan is not acknowledged in any way. In all other reprints the original footnote is retained, but the following additional action is taken:—

(a) Where there has been the addition of a significant section of a new major road alignment which justifies the superseding of existing stock, an additional footnote will be added as follows:—

"Reprinted with the addition of new major roads 19XX."

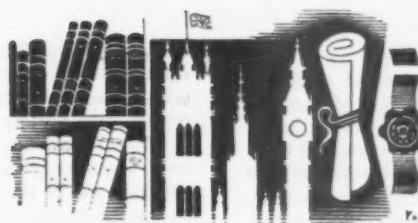
A bar with an asterisk will be added below the edition letter thus A*.

(b) Where miscellaneous topographical changes have been made which do not justify superseding stock, an additional footnote will be added as follows:—

"Reprinted with minor changes 19XX."

A bar will be added below the edition letter thus A.

(c) Where the changes are limited to the correction of errors in names or detail shown at the time of the previous printing, no additional footnotes will be added but a bar will be added below the edition letter, as in (b) above.



PARLIAMENTARY AND GENERAL

The Rating and Valuation Bill

Industry to be fully rated

The Rating and Valuation Bill, which was published on 18th November, 1960, is mainly concerned with preparing the way for new valuation lists for rating due under existing legislation to come into force on 1st April, 1963, and with providing a permanent basis for the rating of charities and kindred bodies. It also contains a number of provisions designed to remove anomalous and archaic provisions in the present law. The Bill applies only to England and Wales.

In a written answer in the House of Commons on 21st November, 1960, the Secretary of State for Scotland stated that the Government propose that the provisions of the Rating and Valuation Bill relating to the full rating of industry and freight transport should be applied to Scotland in 1963 or, if that proves impracticable, as soon thereafter as possible. Legislation to this effect will be introduced in due course. The Secretary of State also proposes to consider, in the light of the outcome of the Scottish revaluation in 1961, whether any further amendments of the Scottish law of valuation and rating are required, and in particular whether there is any need in Scotland for a power to reduce the rateable value of dwelling houses on the lines of that provided in the English Bill.

INDUSTRY

Clause 1 provides for industry and freight-transport to be fully rated when the new lists come into force in 1963.

Industry and freight transport are at present rated at 50 per cent. of their 1956 rental values. As at 1st April, 1959, domestic property accounted for 47.62 per cent. of the total rateable value for England and Wales, and commercial and miscellaneous property for 40.79 per cent. Industry and freight-transport had a rateable value after re-rating in 1959 of about £80 millions (of which over £77 millions is industry)—some 11½ per cent. of the total rateable value for England and Wales.

HOUSES

Because it seems possible that in 1963 the share of the rates falling on householders, in some areas at least, might sharply increase as a result of the change from 1939 to current values, and because it will not be possible until early in 1962 to get a clear picture of the pattern of the increases, the Bill proposes in clause 2 a power for the Minister to cushion the increase

for householders by derating houses for the five-year period of the 1963 lists, by a percentage to be fixed by Order. The Order, which will require the approval of both Houses of Parliament, may fix different percentage reductions for different counties and county boroughs: this is to allow for the possibility that values may be found to have altered since 1939 more in some areas than others.

CHARITIES

The Government have accepted the recommendations of the Pritchard Committee in their Report on the Rating of Charities and Kindred Bodies (Cmnd. 831) in all respects except one. The one exception is that they have decided to exclude from mandatory rate relief the universities and colleges which are in receipt of Government grant through the University Grants Committee. The decision to make this exclusion will in no way affect the status in law of the universities as charities: they are in fact expressly described as charities in the heading of the First Schedule to the Bill. Most of them at present enjoy some relief from rates under section 8 of the Act of 1955, and any increase in rates which falls on the universities after 1963 as a result of the Government's decision will be taken into account in determining the recurrent Exchequer grants to be paid to the universities in the quinquennium 1962-67.

Other charities are to be entitled as of right to 50 per cent. relief from rates, and rating authorities will have power, if they wish, to reduce or remit the balance. Rating authorities are also to have their present power to reduce or remit the rates of kindred bodies extended to cover a wider field, and made more elastic as to the period of the relief (clause 8). In view of these new arrangements, the reliefs for charities and kindred bodies under section 8 of the Rating and Valuation Act of 1955 are brought to an end in 1963; and in accordance with the Pritchard recommendations the present exemptions of certain societies for science, literature and the fine arts, etc., and of voluntary schools are repealed (clause 9). Nearly all of these hitherto exempt bodies are charities, and so will be entitled to 50 per cent. mandatory relief. The rates on voluntary schools (*i.e.*, primary and secondary schools maintained by local education authorities but provided by other bodies, principally the churches) will fall, like other running costs, on the local education authorities: no additional expenditure will fall on the church authorities.

WATER UNDERTAKINGS

Part II of the Bill, with the second and third schedules, introduces a formula method for the valuation of statutory water undertakings. These are at present assessed, under case law, by reference to their accounts; the method tends to produce the highest assessments, proportionately, for undertakings which have incurred heavy capital expenditure since the war. The new formula starts for most undertakings with their values in the present lists at the beginning of November, 1960, although there is to be an initial scaling-down for a small number of undertakings which, in proportion to the water they supply, have assessments more than 75 per cent. above the average for all undertakings. Provision is then made for the adjustment of water assessments on the occasion of each general revaluation of other properties. The adjustment will take account both of changes in the amount of water supplied annually and of local changes in the rental values of other properties since the previous revaluation, as measured by their net annual values. In the intervals between general revaluations changes may also be made for changes in supplies of water if these are in excess of 10 per cent.

OTHER PROVISIONS

When Part II of the Bill comes into force, water undertakings will join the nationalised gas, electricity and transport undertakings in being valued for rating (or assessed to a contribution in lieu of rates) by formula. *Clause 3* would enable the Minister at some future date, after appropriate consultations, to prescribe formula methods for valuing the property of the National Coal Board and other properties at present assessed by reference to the accounts, receipts or profits of the undertakings occupying them (*e.g.*, the docks), or by reference to royalties (*e.g.*, quarries and other extractive industries).

Clause 4 permits the Minister, with the Minister of Education, to prescribe a formula (on the broad general lines of a formula at present applied in practice) for the assessment of county and voluntary schools.

Effect has been given in the Plant and Machinery (Rating) Order, 1960, to all but two of the recommendations accepted by the Government from the Report of the Ritson Committee on the Rating of Plant and Machinery published on 30th January, 1959. *Clause 5* makes the changes in the law which are necessary to give effect to those two recommendations which could not be implemented without legislation—for the exemption of small moveable plant from rating, and the exemption of process plant which would otherwise be rateable solely because it is incidentally used for draining the premises on which it is situated.

Clause 6 makes miscellaneous amendments in the law governing the determination of rateable values. It abolishes deductions from gross value in respect of owners' drainage, etc., rates, and deductions in urban areas for land covered with water and a small number of other properties. The latter deductions represent the consolidation in 1925 of the reliefs from certain types of rate enjoyed before that date by several classes of property. These classes have since been greatly diminished by the complete derating of agriculture, the special arrangements for contributions in lieu of rates for nationalised railways and canals, and the redemption of tithes, and will probably be halved again when the formula method for the assessment of water undertakings takes effect, so that relatively few properties are affected by the change. The corresponding reliefs in rural areas were ended in 1956.

Clause 7 abolishes a 19th century restriction on the rateable value of land acquired for burial grounds under certain statutory provisions. It will put these burial grounds on the same footing as others for valuation for rating.

Clause 10 similarly puts on the same basis the rating of all local authority parks which are available for free and unrestricted use by the public. The broad effect is that, except to the extent that parts of them are used for commercial purposes, none of the parks, under case law, will be rateable in future.

Clause 11 makes it possible for rating authorities to adopt modern methods of accounting in their rating departments. The removal of the requirement for the keeping of a rate book, which dates from an Act of 1743, is accompanied by provisions as to evidence of the due making and publication of rates, and by the substitution of a right for the ratepayer to information from the rating authority for the existing right (which is very rarely used) to inspect the rate book.

Under the existing law, a rating authority may rate the owner of property, instead of the occupier, either by agreement or, if the rateable value of the property is below certain limits, compulsorily. The limits of rateable value are, in general, £25 in London and certain other areas, and £18 elsewhere. New limits will be needed after the 1963 revaluation, and *clause 12* enables the Minister to prescribe these limits. (They cannot be decided upon until there is firm information about the rateable values which are likely to appear in the next list.) At present, the minimum allowance payable to owners who are compulsorily rated is 10 per cent.; and the maximum which may be paid to them, either on compulsory compounding or on compounding by agreement, is 15 per cent. The clause reduces the limit to 10 per cent. in both instances. Rating authorities who pass on to their own tenants the compounding allowances which they receive as owners of houses are obliged to make similar allowances to the owner-occupiers of similar properties. This obligation is withdrawn by the clause.

Under the Rating and Valuation Act, 1955, an occupier may in certain circumstances temporarily withhold part of his rates pending settlement of a proposal made for a reduction of the value of his property in a new list. *Clause 13* modifies this provision so that he may withhold only one-half of the extra rates as compared with his liability in the last year before revaluation, and so that the only proposal which enables rates to be withheld is the first proposal, made in the first six months of the new list, by the occupier or rated owner.

Clause 14 enables rating authorities to refund rates when too much has been paid, in circumstances where at present the ratepayer has no entitlement to a refund because he has delayed taking the steps necessary to restrict his rates to the correct amount.

Premises occupied for the purposes of the Crown are not rateable, although Treasury contributions in lieu of rates are made in respect of such premises occupied by central Government establishments (*e.g.*, Government offices). Some premises occupied for Crown purposes are, however, provided and maintained by local and other authorities (*e.g.*, magistrates' courts and probation offices). *Clause 20* enables these authorities to make contributions in aid of rates in respect of those premises. The expenses which they incur in that respect will qualify for any Government grant at present attracted by the other expenses of maintenance. (The provision for contributions in respect of police premises is consolidated from the Act of 1955.)

The Public Health Bill

Local Bye-laws to be replaced

PURPOSES AND SCOPE OF THE BILL

The Public Health Bill, published on 11th November, 1960, provides for the replacement of local building bye-laws by building regulations made by the Minister of Housing and Local Government and applicable throughout England and Wales outside the county of London. It would also amend provisions of the Public Health (Drainage of Trade Premises) Act, 1937, and incorporate into the general law a number of provisions dealing with various aspects of public health which are already included in local Acts. The Bill does not affect the separate system of building control or separate public health code in force within the administrative county of London. The main provisions of the bill are outlined below.

BUILDING REGULATIONS

The Bill provides that building bye-laws, which are at present made by 1,400 borough, urban and rural district councils, shall be replaced by building regulations made by the Minister of Housing and Local Government, who will have the advice of a Building Regulations Advisory Committee set up for this purpose. The administration and enforcement of the building code would remain the responsibility of the local authorities which now make and enforce building bye-laws.

The Bill would also amend the law about relaxing any building requirement which might otherwise operate unreasonably in relation to a particular case. Local authorities would no longer need the Minister's consent for every relaxation they grant, and the developer would be given

the right to appeal to the Minister against a local authority's refusal to grant a relaxation.

DRAINAGE OF TRADE PREMISES

The Bill proposes amendment of the Public Health (Drainage of Trade Premises) Act, 1937, on lines recommended by a sub-committee of the Central Advisory Water Committee. The main effect of the amendments would be to enable local authorities to make charges (subject to right of appeal to the Minister) for the reception into the public sewerage system of certain trade effluents whose discharge had commenced before the 1937 Act was passed and which were exempted from control under that Act. The Bill would classify as trade effluents (and hence within the framework of the 1937 Act should they be discharged into the public sewers) farm effluents and effluents from premises used for scientific research. It would also empower the Minister by order to remove the special exemption given to laundry effluents under the 1937 Act in any case in which discharge from the laundry would be likely to cause special difficulties in the treatment or disposal of sewage.

MISCELLANEOUS PROVISIONS

The Bill incorporates into the general law a number of public health provisions which are already included in local Acts. These clauses, which make up the bulk of the Bill, are for the most part modest extensions or adaptations of existing statutory provisions which the experience of local authorities has shown to be necessary. They deal with a wide range of matters which are found in earlier public health legislation, including sewers and drains, water supply, infectious diseases, streets, and parks and open spaces.

The Noise Abatement Act, 1960

By BRYAN ANSTEY, B.Sc. (Fellow), F.A.I.

The Noise Abatement Act received the Royal Assent on 27th October and came into operation on 27th November, 1960. It has five sections, three being administrative and two operative. Of these latter, section 2, deals with the restriction of operation on highways, etc., of loudspeakers, and, no doubt, whilst being a personal boon to many surveyors, will probably not concern them very greatly in their professional practice. The other, section 1, is also mainly administrative but the meat of it is in the first subsection which says that (subject to the provisions of this section) *noise or vibration which is a nuisance shall be a statutory nuisance*, and qualifies that by adding "for the purposes of Part III of the Public Health Act, 1936, [and] the provisions of that Act shall have effect accordingly as if sub-sections 1 to 4 of this section were provisions of the said Part III."

So the first point to notice is that for a noise or vibration to be a statutory nuisance, it must also be a nuisance, and there is no statutory definition of a nuisance, only the common law understanding of it. The point of making excessive noise a statutory nuisance is that, whereas an action at court seeking the restraint of an ordinary nuisance must be a matter between an injured party and the person who is

alleged to have done the injury (by committing a nuisance), under the 1960 Act, supported by the procedure in Part III of the Public Health Act, 1936, local authorities will be able to require the abatement of a noise or vibration nuisance by the service of an abatement notice on the person causing the nuisance or on the owner or occupier of premises on which it arises. Naturally, the mere service of a notice will not always abate the noise or vibration, so enforcement is provided for by proceedings in a magistrate's court. If the local authority is, in the eyes of the sufferers, laggard or merely if the sufferers consider themselves aggrieved, three or more occupiers of land or premises may make a complaint to a magistrate. Those who are familiar with the London County Council (General Powers) Act, 1937, should note that section 66 of that Act is amended so as to make the provision indicated.

At first sight it would seem likely that a good many applications to magistrates will be made, but, in practice, this may not prove to be quite the case. In section 3 of the Act, the Minister is empowered, after consultation with any local authority appearing to him to be concerned, to repeal any provision of any local Act which appears to him to be unnecessary having regard to the provisions of the 1960 Act. In the circular from the Ministry to local authorities, the

hope is expressed that local authorities will take full advantage of the powers in sections 1 and 2 which were contained in a number of local Acts. There are about a thousand of these local Acts out of the 3,000 or so local authorities. This may not seem a very large proportion at first, but it is evident that, in the main, those local authorities who were most concerned with the prevention of noise adopted such Acts. Local authorities may therefore prove to be not over-ready to act.

MEANING OF NUISANCE

Local authorities serve abatement notices already, but, as section 1 says, "A nuisance shall be a statutory nuisance" and the problem of proving a nuisance remains. According to Gale, the term "nuisance" is applied in English law, indiscriminately, both to disturbances of an easement already acquired and to infringements of the natural rights of property for which an action can be sustained. Strictly speaking, however, the term "nuisance" should be confined to those acts which, though originally tortious, may nevertheless, in process of time, confer a prescriptive title by enjoyment. If that is a correct legal definition of "nuisance," local authorities may find some considerable difficulty in showing that the alleged statutory nuisance is a nuisance.

There is also the practical difficulty of defining what precise amount of infringement of the natural rights of property is requisite to confer a right of action and thus to establish a nuisance. It seems clear from the whole trend of easement cases that a mere diminution of the rights will not constitute a nuisance; there must be a "sensible diminution" or "substantial diminution" affecting the value or convenience of the property and in every instance it appears to be a question of fact whether such a degree of annoyance exists as can be said to amount to a nuisance.

In the matter of nuisance of noise, there has always been held to be far more elasticity than in the matter of light. Whereas Russell, J., in *Hortons Estate Ltd. v. James Beatty Ltd.* (1927) considered that "the human eye requires as much light for comfortable reading or sewing in Darlington Street, Wolverhampton, as in Mayfair," the doctrine was firmly established in *Rushmer v. Polsue* (1906) that it was not correct to look at the defendants' operations in isolation and in the abstract, but in connection with all the circumstances of the locality and, in particular, in reference to the nature of trades usually carried on and noises and disturbances existing prior to the commencement of the defendants' operations. It was said that what would be a nuisance in one locality might not be so in another. It may well be the case that

a nuisance from noise and vibration is more difficult to prove than in the case of an injury arising from a visible or tangible cause, but Gale quotes many cases to prove that proceedings have been taken successfully in respect of bell ringing, noise from a confectioner's mortar, rifle practice, loud music, a circus or organs, building operations (well-known to many of us), hotel activities and even noisy crowds. It appears that one is very unlikely to be able to show that the noise of school-children playing is a nuisance and presumably, therefore, it will be difficult for embittered noise-makers to get their own back on the local authority by complaining, with the aid of two or more neighbours, that the local authority's school is itself a statutory nuisance.

ENFORCEMENT NOTICE PROCEDURE

Ultimately, and rightly, it will be for the magistrate or a higher Court on appeal to decide, but a good deal of strictly technical and also of technico-sociological work has been done on the subject of noise as a nuisance. It is not, of course, enough simply to take a sound level meter and record the noise in decibels and say that it is, for example, 10 decibels above the background noise. The matter is much more subtle. The mere sound level has to be considered in relation to its spectrum. Has it pure tone components and impulsive peaks and are these maintained continuously day and night or is the neighbours' exposure to nuisance an intermittent one? When the physical facts as to the actual noise of which complaint has been made are ascertained, it is of equal importance to establish the noise in relation to a neighbourhood response curve. Rather more work has been done on this subject in America than in this country but the method has also been used here and it is not without value.

For the benefit of those who are seeking to serve enforcement notices, it should be pointed out that the exact procedure is important. In the years 1952 and 1953, for example, it was held in no less than four cases, that an enforcement notice not stating the date on which it is to take effect is invalid.

Two more points may be noted in the Act. By section 4, nothing in the provisions of section 1 or section 2 shall affect any bye-law or power to make bye-laws, and no bye-law shall be held to be void for repugnancy on the ground that it prohibits or restricts an activity permitted by any of those provisions. By section 5 (2), this Act shall not extend to Northern Ireland. Whether this has any relation to the level of background noise in Northern Ireland or not the Act does not state.

Legal Notes

By H. F. BIDDER (Associate)

I. ESTATE AGENT'S COMMISSION

"Prospective Purchaser"

In these Notes for July last (Vol. 93, page 41) the case of *Ackroyd and Sons v. Hasan* in the Court of Appeal ([1960] 2 W.L.R. 810) was discussed. In that case the court rejected the view that the long line of cases upon the subject had produced any special rules of construction for agreements as to estate agent's commission: each agreement must be interpreted by the ordinary rules for the construction of contracts, applied to the exact terms of the agreement. But if the vendor was to be bound to pay commission for an introduction that did not result in a sale, that must be expressed in clear language.

The latest case upon the subject is *Drewery and Drewery v. Ware-Lane* ([1960] 1 W.L.R. 1204). This depended largely on the meaning of the term "prospective purchaser," of which the Court of Appeal gave an interpretation. The principles laid down in the case mentioned above were applied, though the case itself does not seem to have been referred to.

The defendant, W, was the owner of the leasehold interest in a house, and wished to sell it. He gave instructions to the plaintiffs to sell the property, and they obtained an offer from S to purchase at a price of £2,100. In an interview with the plaintiffs' manager on 3rd January, W said he would accept the offer. The manager produced two printed documents, prepared by the firm, which W. signed. One

was called the Letter of Authority. Clause 4 was as follows :

" I agree to pay you commission at the rate laid down by the various professional Institutes . . . if and when (a) a prospective purchaser signs your 'Purchaser's Agreement' and (b) I sign your 'Vendor's Agreement'."

The other document was the Vendor's Agreement. Later the same day S signed the Purchaser's Agreement, and it was shown to W. These two agreements were subject to contract.

S. was considering also purchasing the freehold of the property. He could not pay the purchase price of the leasehold without a mortgage, and he delayed obtaining this, pending the outcome of his negotiations for the acquisition of the freehold. On 12th January W informed the plaintiffs that, as no progress had been made with the sale to S, he had sold the property to someone else. S proceeded to purchase another house at a rather higher price.

The plaintiffs brought an action in the county court, claiming their commission—£66—and obtained a judgment in their favour. W appealed to the Court of Appeal.

In that court, it was argued for W that the language of the commission agreement was not clear and unequivocal, but was capable of more than one construction, and did not entitle the plaintiffs to their commission before an actual purchase had taken place. It was submitted that "prospective purchaser" must mean something more than a person who signs the Purchaser's Agreement: it must mean a man who is ready and willing to purchase, subject to contract, and who has the necessary financial means to carry the purchase into effect.

Ormerod, L.J., in his judgment, said that the Letter of Authority constituted the agreement between the estate agents and the owner as to the sale of the house. The case turned on its construction.

The effect of it was that the vendor contracted to pay to the plaintiffs commission on the price if two things happened: first, if a prospective purchaser signed the Purchaser's Agreement, which had been drawn up in a form settled by the plaintiffs, and secondly if the vendor signed the plaintiffs' "Vendor's Agreement." It appeared that S. wished to purchase the property, offered £2,100 for it, and would have gone on with the purchase had the matter not been ended by W's letter of 12th January.

The county court judge considered that this was a case where, in clear and unequivocal terms, it was laid down in the contract that commission was payable when events had happened which did in fact happen, and that in those circumstances he could do no other than give judgment for the estate agents. The judge clearly had in mind a passage (also cited in this court) from the speech of *Lord Russell of Killowen* in *Luxor (Eastbourne) Ltd. v. Cooper* ([1941] A.C. 108):

"It is possible that an owner may be willing to bind himself to pay a commission for the mere introduction of one who offers to purchase at the specified or minimum price; but such a construction of the contract would in my opinion require clear and unequivocal language."

Ormerod, L.J., continued: "As far as I know, there is no authority on what is meant by 'a prospective purchaser.' Had the word 'prospective' not been put in, it might very well be that, in view of the authorities, the estate agents might have been in some difficulty. But it appears to me that the word 'prospective' does not connote necessarily either the term 'ready' or 'willing' or 'able'; it means a man who has the question of buying this property in prospect or in contemplation, and is prepared to make an

offer in regard to it. This, of course, does I think mean that it must be a *bona fide* prospect, and that, in the ordinary way, it would be accepted that such an offer, made in those circumstances, would be *bona fide*; and it would be for the defendant to prove, if he sought to set it up, that the offer was not a *bona fide* offer." The county court judge put the matter clearly when he said, "It is to be noted that in clause 4 (a) the word 'purchaser' is qualified by the epithet 'prospective.' In *Dennis Reed Ltd. v. Goody* ([1950] K.B. 277) it was held that the word 'purchaser,' when used without any qualifying adjective, connotes one who completes the purchase; but *Hodson, J.*, said: 'the word may be qualified by other words used in connection with it.' It seems to me that a 'prospective purchaser' is essentially different from a 'purchaser.' A prospective purchaser is one who has purchased in prospect or contemplation, and he may never advance to the stage of becoming a purchaser."

S. showed that he wished to purchase a house, when shortly afterwards he bought another house at a rather larger price. It would be extremely difficult to describe this man as anything other than a prospective purchaser; and if this were so, it was difficult to see how any different construction could be put on clause 4 of the Letter of Authority than this: that if the vendor signs the Vendor's Agreement as put forward by the estate agents and if a prospective purchaser signs their Purchaser's Agreement, the commission is payable. That happened in this case, and the appeal must be dismissed.

The Lord Justice concluded: "It may very well be that it is undesirable that agreements of this kind should be signed by prospective vendors, and it may be wise for a prospective vendor to examine with very great care an agreement which he signs in these circumstances. That is not a matter for this court. We have to consider the agreement which is put before us, and consider what is the proper construction to be put on its terms."

2. LETTING OF PREMISES FOR USE REQUIRING PLANNING PERMISSION

Whether illegal if permission not obtained

In the case of *Best v. Glenville* ([1960] 1 W.L.R. 1198) the question arose whether an agreement for the letting of premises for a use that required planning permission was illegal and unenforceable if that permission were not obtained.

The plaintiff, B, agreed with the defendant, G, to let to her a room in his house at £10 a week, to be used as a bridge club. Both knew that this change of use required planning permission, which G undertook to obtain. She took possession of the room, and opened the club. She applied for planning permission, but was refused—a refusal confirmed by the Minister on Appeal. Apparently during these proceedings she operated the club.

G paid the rent from March, when she went into possession, till July. She did not give up possession till October. B claimed rent under the agreement for the period July to October, and took proceedings in the county court for the recovery of £140. The judge rejected the contention on behalf of G that the agreement was illegal and unenforceable, and gave judgment for B. G now appealed to the Court of Appeal. The court dismissed the appeal.

Ormerod, L.J., in his judgment, said that, in the draft lease, the lessee covenanted to use the premises for the purposes of a club, for which purposes the premises were let. It was argued for G that at any time after the appeal against the refusal of planning permission had been rejected by the

Minister, the local authority could have served an enforcement notice on her, and if she did not comply, she would have been liable to a penalty under the Town and Country Planning Act, 1947. It was contended that B was not entitled to the rent of these premises from July to October because the agreement by B to let the premises was an illegal contract, and therefore a contract that could not be enforced in the courts.

The Act, however, allowed the authority a discretion as to serving the notice: and if they did not serve it for four years, the enforcement notice could not be served at all.

It was also argued for G that when the agreement for the letting was negotiated, both parties knew that the premises were to be used for the purposes of a club, and also that this user as a club required planning permission. The premises were let so that they could be used immediately, and an illegal user was contemplated when the agreement was made, which rendered the agreement unenforceable. In support of this the judgment of Lord Goddard, C.J., in the case of *Attorney-General v. Smith* ([1958] 2 Q.B. 173) was cited, in which he said, dealing with section 12 (1) of the Act of 1947: "The sense of that section is obvious, it is that development of land carried out without permission is unlawful—it is contrary to the Act." It was now contended that a contract based on such a contravention must be unenforceable.

Ormerod, L.J., went on: "I cannot accept that contention. The facts here, as found by the county court judge, are that the plaintiff let these premises to the defendant,

admittedly so that they could be used as a club, and admittedly knowing that planning permission would be required. The judge found . . . that [the defendant] knew about obtaining planning permission, and intended to see to it herself. It was also found that the proper inference to draw from the evidence of the plaintiff was that he would not have let the premises had he known they were going to be used without planning permission. In those circumstances I find it very hard to see what there is illegal in the contract as far as the plaintiff is concerned. There was no duty on him to obtain planning permission. . . . In those circumstances, why should this be an illegal agreement? If neither party took the trouble to take any steps to obtain planning permission, or if each party knew that no steps were to be taken, it might well be the case, if proved, that there was something unlawful in this agreement. But that is not the case, and I can see no reason why the plaintiff should be held to have entered into an illegal agreement. . . . The fact that permission was not granted—which was something which apparently was not in the contemplation of the parties at the time of the negotiations—makes no difference to the question whether the agreement was a legal one or not."

Upjohn, L.J., in agreeing, said that the argument for the defendant necessarily involved the view that an agreement between two parties which involves a user of land for which development permission is required is necessarily illegal if such permission is not previously obtained. He was quite unable to accept so broad a proposition.

Answers in Parliament

The following information has been given by the Minister of Housing and Local Government in the course of a number of answers to questions in the House of Commons.

Caravan Sites : Model Standards

The model standards for residential and holiday caravan sites are intended as a general guide, to be applied with discretion and in the light of particular circumstances; they should be used to bring the bad site up to a satisfactory standard, but not to penalise the site which is already satisfactory. Where further works are required the Minister would expect a reasonable period to be given for carrying them out.

Regarding holiday sites, the model standards apply only to those in continuous use, as distinct from occasional or week-end sites. The Minister hopes that the standards for sanitary facilities on sites will be applied with due regard to the facilities likely to be provided within the caravans themselves.

The Minister has no reason to think that these points are not generally understood by local authorities, and there was a right of appeal to the magistrates in particular cases. The Minister was however, keeping the matter under review and was prepared after a few months' more experience to issue further guidance to the local authorities should this seem to be required. (Written answer, 21st November, 1960.)

Green Belts

The London green belt is already shown in the approved development plans of the counties concerned. Proposals for extending the London green belt and for establishing green belts elsewhere are usually submitted in two stages; first, a sketch plan showing broadly the area to be covered, and, second, a proposal to include in the development plan the precise boundaries of the belt.

Sixty-eight sketch plans have been received, five for extension of the London green belt and the remainder for 31 other green belts; and decisions have been given on all but five, of which four are for one reason or another in suspense and the fifth, submitted in August, 1960, is under consideration. The Minister has before him 13 proposals for including green belts in development plans. These have been submitted at various dates from 1958 onwards, and he will reach decisions on all of them as soon as possible. In the meantime, during the preliminary stages before a green belt is incorporated in the development plan, the local planning authorities concerned have been asked to apply provisionally the development control appropriate to a green belt. (Written answer, 15th November, 1960.)

The Herbert Report

The recommendations of the Royal Commission on Local Government in Greater London are very far-reaching. At this stage the Government are anxious that attention should be given first to the broad design proposed by the Commission, rather than to the many points of detail—such as the provisional grouping of areas to form the proposed Greater London boroughs—which would fall to be considered only if the broad pattern of organisation were adopted. It is proposed to invite local authorities and other bodies principally concerned with the broad local government issues to put forward their views within the next three months. Meantime, the Government will be studying the report, but no decisions will be reached until these authorities and bodies have had opportunity of expressing their views. (Written answer, 11th November, 1960.)

Unfurnished Accommodation

A survey carried out by the Ministry of Housing and Local Government showed that for four weeks in 1956 before the Rent Bill was published, 40 flats were advertised to let unfurnished in the London evening papers. In the corresponding four weeks in 1960, 760 unfurnished flats were advertised. (Oral Answer, 8th October, 1960.)

Planning and Compulsory Purchase Appeals

The average time taken to determine an appeal against a planning decision or compulsory purchase order is about six months from the date of the receipt of the appeal or order at the Ministry. The Minister is doing his utmost to reduce this time, in particular by recruiting more inspectors to hold inquiries. The number of planning appeals in 1960 is running 25 per cent. above 1959. (Oral answer, 8th October, 1960.)

Five months is the average time taken by the Ministry of Housing and Local Government during the last three years in dealing with appeals from planning authorities under section 16 (1) of the Town and Country Planning Act, 1947,

in cases where the parties disagree with a public inquiry. (Written answer, 29th November, 1960.)

Improvement Grants

The new measures contained in the House Purchase and Housing Act, 1959, to encourage the improvement of older houses have already produced a marked response from both landlords and owner occupiers. Between January and September, 1960, private landlords obtained improvement grants for nearly 18,000 houses. (Oral answer, 8th October, 1960.)

Redevelopment of Central Areas

The Minister of Housing was considering the report of the one-day conference of the Civic Trust held on 15th July, 1960, but, inasmuch as the conference appeared to want some special lower rate of interest for central area redevelopment, it would go against Government policy about providing hidden subsidies. The Minister does not consider that financial assistance should be necessary in what are, by hypothesis, the most valuable areas of cities but he is considering the possibility that the machinery for deferring interest charges may need extension. (Oral Answer, 8th November, 1960.)

Parliamentary Notices

SIGNIFICANT DATES

31st December, 1960

The Building Societies (Accounts) Regulations, 1960 (S.I. 1960, No. 1826) operative. See *The Chartered Surveyor*, December, 1960, page 335.

The Building Societies (Annual Return and Auditors Report) Regulations, 1960 (S.I. 1960, No. 1827). See *The Chartered Surveyor*, December, 1960, page 335.

1st January, 1961

Registration of Title (Kent) Order, 1955 (S.I. 1955, No. 956). See *The Chartered Surveyor*, August, 1955, page 125.

2nd January, 1960

Increased minimum farm wages payable. See *The Chartered Surveyor*, December, 1960, page 306.

BILLS BEFORE PARLIAMENT

(Correct to 16th December, 1960)

Covent Garden Market Bill "To establish a Covent Garden Authority and vest in them lands in the parish of Saint Paul, Covent Garden, and in the metropolitan borough of Finsbury and chattels the property of Covent Garden Market Limited; to make provision for the conduct in, and adjacent to, Covent Garden, under the control of the Covent Garden Market Authority, of activities relating to the dealing in bulk in horticultural produce; and to make provision with respect to matters arising out of the matters aforesaid." Second Reading, House of Commons, 7th December, 1960.

Esso Petroleum Company Bill "To empower Esso Petroleum Company Limited to construct pipelines and other works and to acquire lands and for other purposes." Private Bill. Passed, House of Commons. Second Reading, House of Lords, 24th November, 1960.

Flood Prevention (Scotland) Bill "To enable the councils of counties and boroughs in Scotland to take measures for the prevention or mitigation of flooding of non-agricultural land in their areas; and for purposes connected with the matter aforesaid." Committed to the Scottish Standing Committee, 23rd November, 1960.

Land Drainage Bill "To enable river boards and catchment boards to raise drainage charges for the purpose of meeting part of their expenses; and to make further provision relating to the drainage of land and to drainage boards." Second Reading, House of Commons, 14th November, 1960.

Licensing Bill "To amend the Licensing Act, 1953, to make further provision about the sale and supply of intoxicating liquor and about licensed premises, and for purposes connected therewith." Second Reading, House of Commons, 29th November, 1960.

Mock Auctions "To prohibit certain practices in relation to sales purporting to be sales by auction." This is a Private Members Bill (drawn fourth in the ballot) which the Government intend to support. First Reading, House of Commons, 23rd November, 1960.

Public Health Bill "To amend the provisions of the Public Health Act, 1936, relating to building bye-laws, to make such amendments of the law relating to public health and the functions of county councils and other local authorities as are commonly made in local Acts, to amend the law relating to trade effluents and to amend section two hundred and forty-nine of the said Act of 1936." House of Lords Bill. Second Reading, House of Lords, 24th November, 1960.

Rating and Valuation Bill "To amend the law with respect to the valuation of property for the purposes of rates and with respect to the making and collection of rates." Second Reading, House of Commons, 30th November, 1960.

Trustee Investments Bill "To make fresh provision with respect to investment by trustees and persons having the investment powers of trustees and by local authorities, and for purposes connected therewith." House of Lords Bill. Third Reading, House of Lords, 15th December, 1960.

Trusts (Scotland) Bill "To amend the law of Scotland relating to trusts." Second Reading, House of Commons, 28th November, 1960.

Weights and Measures Bill "To make amended provision with respect to weights and measures, and for connected purposes." House of Lords Bill. Second Reading, House of Lords, 22nd November, 1960.

STATUTORY INSTRUMENTS

Perpetual Rent Charges

Section 191 (1) of the Law of Property Act, 1925, requires the Minister of Agriculture to certify the amount of money necessary to redeem certain perpetual rent charges. That amount is fixed by reference to the average price of a range of Government securities prescribed by the Treasury under section 191 (2).

The Perpetual Rents Redemption (Prescribed Securities) Instrument, 1960 (S.I. 1960, No. 2068, 2d. net) adds four stocks to the two prescribed under the Order dated 28th April, 1947.

Building Societies

The Building Societies (Authorised Investments) Order, 1960 (S.I. 1960, No. 2091, 3d. net) prescribes the manner in which building societies may from 1st January, 1961, invest such of their funds as are not immediately required for their purposes.

Library Notices

PAPERS SUBMITTED UNDER BYE-LAW 34 (1)

The Council have accepted the following papers in fulfilment of the obligation of their authors under Bye-Law 34 (1); the papers are filed in the Library for reference purposes:—

- (a) "Development Plans for Small Communities," by A. T. Swindall (Professional Associate); and
- (b) "Photographic Rectification," by Major G. J. F. Holden (Professional Associate).

REVIEW

Planning Enforcement Procedure and Caravan Control

By Lewis F. Sturge, barrister-at-law. Published and presented by The Estates Gazette, Limited, 28, Denmark Street, London, W.C.2. 1960. Price 30s.

Of all the changes that have taken place in the last 25 years, one of the most striking is the development in the use of caravans. Primarily designed to provide self-contained holidays for individuals, the caravan is now in many cases used to meet the shortage of houses: the caravan site acts as an emergency housing estate. And a caravan with a pitch by the seaside has become a very profitable investment, though it never moves.

It is not therefore surprising that the code provided by section 269 of the Public Health Act, 1936, for "movable dwellings" has become inappropriate. The work under review presents a picture of the law as it now stands after the coming into operation of the Caravan Sites and Control of Development Act, 1960. By this Act, caravans and caravan

sites are withdrawn from the operation of section 269, and a new system of control is set up—largely based on site licences issued by the local authority. Difficulties had arisen in connection with enforcement notices served in respect of planning permission required under the Town and Country Planning Act, 1947; and a new procedure is provided to meet them. "Caravan" is defined for the first time; but it is still required to be mobile, at least to the extent of being capable of being transported.

Mr. Sturge's book presents a clear and well-arranged account of the law, together with the text of the Act of 1960, and the relevant sections of the Act of 1947, as amended. His analysis of the relationship of the caravan code to the town and country planning code (a fundamental feature of the new system) is particularly valuable. The Appendix also includes the explanatory Ministerial Circular issued in relation to the Act of 1960.

H. F. B.

PUBLICATIONS RECEIVED

Standard Method of Measurement Illustrated

By G. Chrystal-Smith, A.I.A.S., A.I.Q.S. Published and presented by George Newnes Ltd., Tower House, Southampton Street, London, W.C.2. 1960. Price 35s.

Practical Surveying

By G. W. Usill. 15th edition revised by K. M. Hart, F.R.I.C.S., M.I.MUN.E. Published and presented by The Technical Press Limited, 112, Westbourne Grove, London, W.2. 1960. Price 25s.

Correspondence from Members

COMMISSION CASES

Dear Madam,

The position with regard to estate agent's commission seems to be somewhat obscure. At present, a commission is supposed to have been earned on one introducing a person able, ready and willing to purchase on terms authorised by the vendor. However, the courts do not seem to uphold this and, in general, a commission is not earned until contracts have been exchanged. Would it not be more practical to make commissions payable on terms which the courts will support? Such a change would prevent many of these cases going to court which, even though they are mainly brought by unqualified firms, bring us all into disrepute.

Yours faithfully,

DAVID MORRIS.

6, Poultry, London, E.C.2.

CAVE CANEM

Madam,

I was more than a little amused to read in my Old Boys Gazette that a recent article in the press stated that, while revising Ordnance Maps, surveyors of Lindsey County Council, Lincolnshire, have renamed a house at Scawby, near Scunthorpe. Its proper name is Highwood Cottage, but on the new maps it is now called Cave Canem, after a sign on the front gate. Now the surveyors have found that *Cave Canem* is Latin for "beware of the dog."

I am wondering, therefore, whether the Educational Policy Committee of the Institution should not consider including Latin in the syllabus for its examinations.

Yours faithfully,

S. R. FRASER.

Penn's Place, 9, Church Street, Hampton, Middlesex.



JUNIOR ORGANISATION QUARTERLY

HON. EDITOR: ALAN GILLET

No. 10

ANNUAL CONFERENCE 1960

The Junior Organisation Annual Conference provides the opportunity for the representatives of every Branch to debate the live issues of the day. This Session the Chairmen and Hon. Secretaries of the Branches joined their representatives and, after helping to move the heavy furniture from the Council Chamber to the Lecture Hall, battle commenced following the President's warm words of welcome. As Rea Stewart, this year's chairman of the Scottish Branch, tells us: "Business was brisk under the scowling portraits of eminent predecessors; heavy oratory interspersed with pawky wit embellished subjects as wide apart as film making and examinations."



A recent picture of the J.O. Committee with Rafe Clutton in the Chair

The Conference agreed that the Institution should sponsor public meetings and also publish a booklet on buying and selling houses. Occasional errors in examination papers should be eliminated by better proof-reading and scrutiny, and the system for obtaining a prior opinion on the suitability of an office for an examination candidate's training ought to be improved. It was agreed that week-end residential courses should be increased and interest revived in President's Prize and Ryde Memorial Prize papers. Members agreed that a luncheon or other function might be held for junior members attending the Institution's Annual Conference. It was thought that to be compelled to qualify the title "chartered surveyor" by putting "Professional Associate" afterwards was not desirable.

The debates were as usual full of life and for further information on the results, members should ask their Branch representatives, assuming that they have since returned from London!

THE ANNUAL DINNER

The Annual Dinner, held on 10th November, 1960, proved to be as successful a function as its forerunners and the speeches if anything excelled those of earlier years. A record number of 219 heard the President propose the toast of the Junior Organisation of which he himself had been Chairman in 1928. Having in mind the principal guest of the evening he likened his own position to that of the mountaineer. "The nearer you approach the summit," said Mr. Eve, "the more giddy you become. Sir John Hunt's party stayed only fifteen minutes at the top—I have to stay a year!"

The Chairman of the Junior Organisation, Rafe Clutton, in replying to the toast, referred with pleasure to the attendance of many junior members who had come "from far and wide" to be present at the Conference and the Dinner. Ending his speech with an appeal for goodwill between the various sections of the profession, Mr. Clutton declared that "whatever the bye-laws may say—the Junior Organisation spirit knows no age limit!"

The Toast of the Guests was admirably proposed by Mr. P. J. Elliott and his introduction of Brigadier Sir John Hunt, C.B., D.S.O., can seldom have been bettered: "In an age when values are distorted responsibility is often avoided and ruffians enabled to glory in their behaviour, it is, to say the least of it, reassuring to find a man of the stamp of Sir John, who by his example on Everest and elsewhere, continuing through his work as Secretary of the Duke of Edinburgh's Award Scheme, is assisting the development of qualities of character and citizenship in the youth of this country, so that we may avoid the state of that land described by Chesterton 'Where wealth accumulates and men decay'."

Sir John Hunt

We have had many requests for a full report of Sir John Hunt's inspiring speech in which he described the challenge thrown out five years ago by the Duke of Edinburgh to boys—and later to girls—to claim awards for enterprise, achievement and public spirit in leisure time. The following extracts cover the main points:—

"I propose to pose two awkward questions about present-day society in the western world: and in so doing, I am going to stick my neck out!

"Are we sufficiently aware of the social consequences of technological progress and in particular, are we preparing young people for them, through education?

"Secondly, and a much more fundamental question, can it be said that present-day society in the western world is confronting the big ideological challenge of our time with any alternative sufficiently inspiring to be effective?

"To illustrate what I mean by the first of these questions, may I remind you that we are in the midst of a second industrial revolution which bids fair to make great differences in the way of life of many of us—the pattern and proportions of work and leisure—resulting, among other things, in great numbers of ordinary folk who have been least experienced in using leisure-time in the past. Yet how little thought is being given to the effect of this—for better or worse—on the outlook and behaviour of individual people and on the relationships between people; to the opportunities, other than material ones, which more leisure opens up; to the ways in which the great mass of people might obtain the greatest amount of pleasure, satisfaction and real benefit from it, if given a really wide and free choice, free from the commercial exploiters of leisure and their powerful aides, the ad-men?"

"This is one aspect of the problem. But it leads straight on to my second point—the ideological challenge. For it seems to me that the choice we make in spending leisure is of tremendous significance to the kind of future we hope to build and enjoy.

The Duke of Edinburgh's Award

"We need, and we need them urgently, many more ordinary men and women of sufficient vision and sense, enterprise and above all—guts, to reverse the present trend; to set personal examples of an opposite and positive kind, if we are to safeguard the future. The need is critical and I look hopefully to the young generation to supply it.

"Dramatic though this may sound, this is the essential background to everything that is being done, and much else which ought to be done, under the banner of the Youth Service. The trouble is that most people are too polite to mention it; but you cannot strike a note of urgency without being blunt, and without going to the roots of the problem. Although it was not so framed, it provides a setting for the challenge made by Prince Philip through his Award Scheme. This is a challenge equally directed to young people and to grown-ups; to youth in the "teenage" bracket, to use leisure purposefully, measure up to the standards set in the Scheme and in so doing, to get a lot of satisfaction in discovering that they've got to give; to adults—perhaps especially the younger ones!—to lend younger people a hand in their endeavours.

"For the distance that young people can travel along this vital road to self-discovery and the number who travel it; the extent also, to which one of the most serious barriers dividing our society is removed—the barrier between youth and adults—these things depend directly on the numbers of adults who are willing to travel the same road with them."

* * * * *

SLEEPERS AWAKE

The facts and figures of railway conversion fascinated a large audience at the meeting held at the Institution in October when Brigadier T. I. Lloyd expounded on how the country would save in costs, time and manpower by scrapping the railroads and turning them into "real roads." The freedom of "the unbroken journey," the inner circle crying out to be an urban motorway, gearless vehicles designed for the new level highways—these were a few of the many interesting points brought out. Brigadier Lloyd ably replied to the many questions raised both by doubters and converted. The meeting was then closed by the President who remarked: "some of us have trains to catch. . . ."

FORTHCOMING ATTRACTION—BUT WHEN?

The subject of the next ordinary general meeting to be held at the Institution on Thursday, 5th January, 1961, is one that has been argued and debated in the press and elsewhere for a number of years—"The Channel Tunnel." In the minds of some this conjures up thoughts of quick, cheap travel to Paris for the week-end, but in others the project signals the end of our first and finest line of defence. To discuss the multifarious problems involved we are privileged to have Mr. H. J. B. Harding, B.Sc., F.C.G.I., D.I.C., M.I.C.E., Vice-President of the Institution of Civil Engineers, who is the British consultant to the International Study Group. The meeting, which is organised by the Junior Organisation Quantity Surveyors Committee and is open to all members, is preceded by tea at 5.30 p.m. and will commence at 6.15 p.m. when Mr. Cyril Sweett (Fellow) takes the Chair.

AROUND THE BRANCHES

The South Wales and Monmouthshire Junior Branch recently arranged a most enterprising project, when members drove from all parts of South Wales to hold a series of functions in London. "We arrived at the Institution at 2 p.m. on Friday, 28th October. A comprehensive survey was made of Westminster Abbey, including sections of the building such as the galleries in the four sections of the roof, not normally open to the public. This was followed by a reception at the Institution, taking the form of a sherry party attended by the Secretary, members of staff and the Junior Organisation Committee. The evening was spent at the Whitehall Theatre and a late supper in Soho rounded off the day.

"On the Saturday morning a visit was made to the Houses of Parliament, where one of our junior members, J. E. Hugh Rees, Member of Parliament for Swansea West, escorted us around "the best club in the world." Unfortunately tea was not taken on the terrace owing to torrential rain.

"In conclusion, we wish to thank all those who made the visit such a success and, in particular, our organising Hon. Sec. Michael Cross."

The Scottish Junior Branch Executive Committee has found that the quotation "East is East and West is West" does not run true to form north of the border. Not only does East meet West under its encompassing wings but even North as well! The "East" takes the form of the East of Scotland Junior Sub-Branch where such varied pursuits as a five-a-side football tournament, visits to a national newspaper office and the Forth Road Bridge have been covered.

The "West" trying hard to control the "going roons of Glasgae" through the West of Scotland Junior Sub-Branch have already enjoyed a five-a-side football tournament, visit to a cement works and lecture on the eradication of woodworm.

The sparkle of the granite has been grasped by the newly formed Aberdeen and North Eastern Counties Area Committee, whose members have already organised a five-a-side football tournament, golf outing, and visit to a creamery.

With such "goings-on" and with a future programme at all points of the compass for light, heavy and intellectual subjects, the flourishing of the haggis is assured.

McARICS' LAMENT

The far off hills are always green and on being asked the difference between general practice north and south of the border a cynical northerner may reply, "the difference between a peat bog and green fields."

By far the most firms of surveyors in Scotland who describe themselves as being in general practice in fact originated as "factors," those who collected rents, administered Scottish tenement properties and advised those wise investors who put their money into "stone and lime," the "best security in Britain" (at that time). Since the instigation of the Rent Acts they have continued not only to keep the bulk of Scottish tenement buildings standing, but even, on occasion, to show a credit balance.

Now McArics, a surveyor in general practice, knows that rent restriction is by no means a local affair; he also knows that rent restriction has affected over 95 per cent. of house property available to let north of the border. The simple result has been that practically no house property has been erected privately for letting purposes in his country for forty years or more. It is also unlikely under present conditions that anything of the kind will ever be erected again within his lifetime.

The neighbourhood within which his business is situated is comprised to a very large extent of tenement property which has cost the unfortunate owner so much to maintain in the past that if he has not made a limited company out of the remnants, he probably should have done. In either event in order to recoup some of his losses, to provide for the cost of ultimate demolition and above all to try to get rid of his property, he has had to sell individual flats whenever vacant possession could be given.



Thus poor McArics often finds that in the course of his management duties he is looking after the interests of both the owner of a tenement property containing, say, twelve houses of different sizes, and the individual proprietors of the shops on the ground floor and of two of the houses which have been sold and are thus "owner-occupied." The remaining houses are still tenanted and most are controlled—that is—let at a rent that would not buy a packet of twenty filter-tipped cigarettes a week. These are probably houses to which the 1926 Act refers, in which case he is personally obliged to collect the local rates as well as the rent.

McArics sees around him, therefore, slum-ridden and

jaded towns and cities within which no constructive or extensive redevelopments have taken place since 1914 and the first Rent Restriction Act. So, on hearing that a large amount of capital is available in the property market, he endeavours to attract some of this capital to his own town. He is successful! Here comes a sensible man with sound backers (some of them might even be advised by chartered surveyors!) who can see that a two-storey building at one of the busiest corners in the centre of this sizeable town is ripe for development as a multi-storey shop and office block.

McArics is about to fulfil his destiny, to prove that by judicial investment in property he can ensure his clients a sound return on capital expended in redeveloping a central site in the middle of the city. He deservedly receives instructions to acquire this desirable site but soon finds that every occupant thereof is an "owner-occupier" who, in return for his payment of the feu duty in perpetuity, can frustrate any prospective developer. Only a compulsory purchase order can make him budge.

This stagnation is called the feudal system. Land tenure in perpetuity and nobody can say "boo." No leasehold to acquire, no means of acquiring a multiplicity of interests in order to redevelop a falling down property. If one owner-occupier wishes to hold on to his property then all redevelopment can only be carried out by the local authority with compulsory purchase powers.

McArics, pushing his bike, sees his southern colleague flash past him in his Rolls on his way to the Scottish grouse moors and salmon rivers, and McArics shortly after emigrates. Perhaps in some years time he himself may have the satisfaction of flashing past that Rolls, as it purrs along some American, Canadian or Australian highway, in his private jet aircraft on his way to supervise the development of Alaska, Hudson Bay or the Darwin peninsular.

BIGGER THAN BIG

We Survey the Scene behind the Screen

This profession takes us to many unusual places. Recently, we were privileged to take a look at a most remarkable building, Associated-Rediffusion's Studio 5. We were conducted by the Company's Property Manager, a chartered surveyor, through the very elaborate interior of the world's largest television studio. Fourteen thousand square feet of floor and a clear height of 40 feet seemed capable of accommodating almost anything; for example, a studio audience of 500, a herd of elephants—or both—with all the paraphernalia of a large-scale TV show.

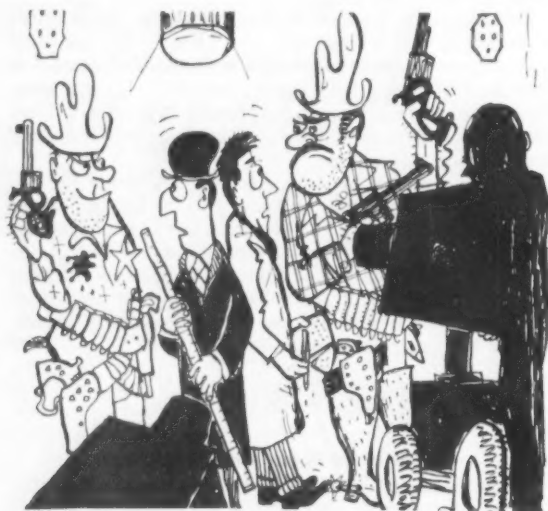
This monster studio can be divided into two completely separate areas for smaller shows, by most elaborate but effective soundproof double doors which can be raised or lowered as required. It was to see the mechanism which operates these doors that we put our climbing legs to the test. We ascended the steep metal stairs to the motor room above the studio roof, 75 feet above the ground. The doors, which weigh 25 tons each, can be raised and lowered by four small electric motors which take about half an hour to complete the operation.

Many surveyors have seen gaps and cracks in structures where no gaps ought to be, but here was a brand new building with a crack built in. The structure forming the two halves of this immense studio is divided by a small gap extending from the roof to the ground, including the foundations, for the special purpose of preventing sound being conducted from one half of the studio to the other, when they are being

used separately. It certainly is the best story we ever heard for the existence of a crack in a new building.

The floor of the studio created a considerable design problem. It was essential that it should be level to within plus or minus one-eighth of an inch overall. This was achieved by a specially reinforced concrete floor, with half-inch mastic asphalt and linoleum finish. The length of the floor is likely to vary by three-quarters of an inch with normal temperature changes, and it was necessary therefore to provide two special metal comb joints which would cause the least possible camera wobble when tracking over them.

Next we saw the control rooms. One each for sound and vision, duplicated for each half of the studio. A bewildering spread of controls were there to co-ordinate eight cameras and 52 microphone circuits into one single programme. We also learned that "sound reinforcement" for audience participation is not a building term but merely "canned" clapping.



Our next call was in the property store. What a feast for sore antique-shop eyes! There seemed to be everything there, including the kitchen sink (double-drainer unit complete with taps, dish mop and, needless to say, *that* brand of detergent).

In one of the smaller studios we saw the "set-up" for a new play. For the interiors, floor boards were painted with water paint onto the lino floor of the studio. This is then washed off when no longer needed so that many other types of surface can be simulated in the same way—a novel idea that "do-it-yourself" addicts might like to copy.

Outside we saw the vans arriving with the scenery. Elderly storekeepers nonchalantly unloaded mighty looking doric columns of impressive size. We rubbed our eyes, then realized it was they and not we who were plastered. Most of the scenery is prepared elsewhere and brought to the studio in readiness for the productions, but we were able to see a scenery store in which are kept the more frequently used pieces. Elfin glades by the dozen but, alas, no Emergency Ward 10.

All the activities of such a busy studio could not be sustained without refreshment, and we saw the spacious new canteen which can serve 200 people, situated close to the main studio. The suspicious glances cast in our direction

were explained when we read the notice over the door: "In the interests of hygiene, animals are not allowed in the canteen."

Our visit was over, and not even a "technical fault" or "break in transmission" to gladden the heart of these eagle-eyed surveyors. We bade farewell to our host who was off to a meeting with the building contractors to discuss the future maintenance of this huge building. In this case, perhaps, just a little matter of super vision.

NORTHERN LIGHTS

The Lyme Hall, Disley, Cheshire, Course,
11th to 13th November, 1960

It may have been that the members who attended the weekend residential course, organised by the Lancashire, Cheshire and Isle of Man Branch, enjoyed themselves because they were eating and sleeping in a former county family seat amidst beautiful parkland, nearly two miles from the nearest main road and with a private bar; or perhaps they really did benefit from the dozen or so lecturers who so willingly gave up their weekend to talk about, and then discuss, various aspects and problems of the profession.

The principal discussion concerned "Design and Demand of Contemporary Homes," and after some down-to-earth statements by an architect, a "speculative" builder and a building society surveyor, the sparks really began to fly! Some magnificent creations illustrated by the architect, and the views of the man who is in business to sell, matched with the necessarily conservative approach of the valuer looking for security, combined to give food for thought which could have taken up the whole weekend. One of the salient points on which there was general agreement, however, was that with more enlightened and better qualified staff in the offices of planning authorities—particularly those who at the moment relied on the opinion of a building inspector—we would take a big step forward in preventing some of the current monotonous development.

The sincere thanks of the members are accorded to the lecturers who attended as follows:—

G. R. Beech, B.A.R.C.H., DIP. CIV. DESIGN, A.R.I.B.A., Lecturer at Liverpool University School of Architecture; J. Borthwick, Technical Officer, Messrs. Williams and Williams; I. L. Brown, Appointments Officer of the Institution; Roger A. Burgess, B.A.R.C.H., A.R.I.B.A., Manchester University; Major R. M. W. Busk, R.E., Assistant Region Officer, Ordnance Survey; L. N. R. Davies (Fellow); O. Davies, Joint Managing Director of Leonard Faircloughs Limited; C. H. Eckert, R.A. (Professional Associate), A.A.I., Cambridge University Department of Estate Management; Robert Hayton, A.C.A.; T. Hoyer, M.A., Cambridge University Department of Estate Management; A. Kemp, F.I.O.B., Hampson and Kemp Limited; D. Y. Pitts (Fellow), SPEC. DIP. RATING; L. Smith (Fellow), Regional Staff Surveyor, Woolwich Equitable Building Society.

PRE-CONTRACT PRACTICE—AN AQUATIC SPORT

It was after a meeting organised in 1953 by the J.O.Q.S. Committee that "AQUA," a group of ten young practising architects and quantity surveyors, resolved on united action to put forward some effective and practical suggestions for improving the pre-contract preparation of building work. The result of their labours, a book entitled "Pre-Contract Practice for Architects and Quantity Surveyors" has now been published (by Messrs. Crosby Lockwood and Son, Limited), and Mr. Peter Johnson (Fellow), Chairman of the Group, introduced it to a large audience at a meeting organised by the J.O.Q.S. Committee on 22nd November, 1960. Mr. Johnson gave a most interesting insight into the motives and aims of the group in putting forward some of the suggestions made in the book.

PROGRESSIVE INDEX VOLUME 93

July—December, 1960

INSTITUTION	PAGE
Annual Conference, 1961	107
Annual Conference, 1960	107
Address by Chairman of the North Wales Branch	156
Address by Vice-Principal of the University College of North Wales	156
Agricultural Conference: Report	227
Correspondence Courses by Part	220
Discussion Groups: Reports of Group Leaders	220
Editorial Report	153, 215
"Educating the Future Citizen," by Wolfenden	157
"Education for the Professions," by Part	162
"The Education of the Chartered Surveyor," by Wells	217
"Meo Periculo"	3
Progress Report of the 1959 Conference by Brackett	166
Mining Conference: Report	324
Annual Dinner, 1961	289
Balch-Essex Prize	106, 108, 167
Benevolent Fund	231
Annual General Meeting	168
Christmas Greetings Cards	50
Diamond Jubilee	53
Royal Wolverhampton School	52
Branches	52
Chairmen elected	54, 110, 233, 290
Officers and Committees	7, 55, 234, 291
Quantity Surveyors Sections	233
Reports	7, 54, 167, 233, 290
Chartered Surveyors (1913) Club Council	168
Ballot: scrutineers' report	51
Election for the Session 1961-62	288
Life Member: Harold Williams	51
Minutes: extracts	51, 229
Daniel Watney Prize Charity	11
Editorial Notes	278
Agriculture at Bangor	278
Annual Conference, 1960	215
Balch-Essex Prize	106
Benevolent Fund: Diamond Jubilee	50
Birthday Honours	2
Building Societies Act, 1960	2, 106
Central Advisory Water Committee: Report	106
Civic Trust Conference	106
Company Law: Institution Memorandum	215
Consortia: Employment of Quantity Surveyors	106
Council on Tribunals: First Report	2
Decimal Coinage and the Metric System	106
Esso Petroleum Bill	106
Farm Buildings: experimental scheme	50
Golf: Centenary Open Championship	216
House Improvement Grants	216
Index to Volume 92	216
Institution's Charter: amendment	106
Institution Staff: Mr. P. F. Brandt, B.A.	50
Land Drainage	277
L.C.C. Development Plan: Public Inquiry	216
Local Government in Greater London	216
Price of Land	49, 51
Publication of Members' Correspondence	50
Management and Maintenance Costing	278
New Members: Reception	3
Photogrammetry	216
Pipeline Easements	278
Public Works and Municipal Services	216
Congress	277
The Queen's Speech	277
Rent Act, 1957	49
Rural areas: new houses	49
Schedule A tax	49
Sessional Programme	105, 215, 277
Weights and Measures	277
Examinations	57
Centres for 1961	57
City and Guilds of London Institute: examination for Quantity Surveyors' Assistants	108
Examiners' Reports	292
Prizewinners, 1960	57
Town Planning Joint Examination Board: Part I Final Examination, 1959: Examiners' Report	8
Statistics and Passes for 1960	58
Fédération Nationale de Méteurs-Vérificateurs	290
Patentes: Report of visit by William James	290
Housing Management Training Schemes: Institution Booklet	53
Junior Organisation (see Quarterly on next page)	
Members	
Bi-centenary: Messrs. J. P. Sturge and Sons	55
Deceased	51
Description of firms of architects and surveyors	166

PAGE REFERENCES	PAGE
July: 1-48	October: 153-214
August: 49-104	November: 215-276
September: 105-152	December: 277-338
INSTITUTION—Continued	PAGE
Fees and Practice Joint Conference	6
Fellowship: transfers	51
List, 1961	5, 107, 166, 232, 288
Newly-elected members	51, 337
Obituary	
Cecil Perry Bates	4
William Heelis Law	53
Pensions for Land Agents	5, 288
Personal Announcements	6, 56, 110, 234, 291
Photogrammetry: Ninth International Congress	5, 50, 51, 285
President: Mr. J. D. Trustam Eve (Fellow), F.I.A.S., F.A.I.	
Biographical Note	1
Presidential Address	279
Prevention of Fraud (Investments) Act, 1958: dealings in and notices relating to Securities	54
Professional Charges	
Architectural Services: Scale 35	232, 288
Fees for woodland and farm management	108
Professional Practice	
Disciplinary Action	232
Rating Diploma Holders Section: Annual General Meeting	231, 312
Rebuilding the Institution	232
Royal Agricultural Show: Cambridge, 1960	5, 109
Sessional Programme	
Meetings for October, 1960	107
Meetings for October and November, 1960	167
Meetings for November and December, 1960	231
Meetings for December, 1960, and January, 1961	289
Ordinary General Meetings, 1960-61	107
Sport	
Cricket	5, 57, 109
Football	167
Golf	8, 50, 109, 232, 284
Hockey	167, 232
Rugby Football	167
Sultans Ltd. and America Ltd.	232
Technical Films	
"How a House was Built"	5
Winter Agricultural Conference	107, 231
Yerbury Foundation: Annual Lecture	231
AGRICULTURE AND FORESTRY	PAGE
"The Agricultural Division: Quo Vadit?" by Walsley	172, 236
Agricultural land: net decreases	114
Agricultural Loans: Interest	114
Agricultural Returns for England and Wales, 1960	175
Agriculture and Forestry Committee: Officers	306
Agricultural Land Tribunals (England and Wales)	305
Agriculture Meetings at the Annual Conference: Report	227
Bovine Tuberculosis	114
Cereals Deficiency Payments, 1960-61	11
Daniel Watney Prize Charity	11
"Dune Reclamation at Braunton Burrows, Devon," by Kidson and Carr	298
Farm Buildings Competition: Country Land-owners Association	241
Farm Rents	113
Grants	
Experimental Farm Buildings	50
Farm Improvements	11
"Improving a Hill Farm," by Roberts	169, 303
Infestation Control Laboratory: appointment of committee	11
Land Drainage Act, 1930	241
"Practical Points: the Agricultural Surveyor," by Thompson	239
Publications	175
"Reimbursement of Limited Owners" by Denman and Howe	60, 175
"Research and the Agricultural Practitioner," by Aston	9
Rural Estate Management: Conference	113
Sales of Standing Coniferous Timber from Forestry Commission Areas	241
Statutory Instruments	175
"Why Invest in Farm Land? A Paradox of Theory and Practice," by Harris and Stewart	111
Winter Agricultural Conference	107, 231
VALUATION, HOUSING AND PLANNING	PAGE
"Caravan Sites and Control of Development Act, 1960," by Glenn	329

VALUATION HOUSING AND PLANNING	PAGE
Central Advisory Water Committee	
Report	50
Sub-Committee on Water Charges	73
"The Changing Pattern of Living," by Strachan	242, 307
Crown Estate: History	73
"The Evolution of the Chartered Surveyor in British Society," by Steel	176
Flatlets for Old People: Ministry Circular	254
Great Ouse Basin: hydrological survey	73
Green Belts: Ministry circular	73
Housing Management Training Schemes: Institution Booklet	53
Kenya: land policy	139
Land: high price	49, 105
Land Usage: Ministry circular	188
Lands Tribunal Decisions: Review by Hattersley	
Compensation under the Housing Acts	249
Compensation for Injury	12
Compensation for the laying of sewers and water mains under the Public Health Act, 1936	247
Equivalent Re-statement—Rule 5	13
Local Employment Act, 1960	20
Local Loans Fund	126
"Net Density, Cost and Value in Public Authority Dwellings," by Lichfield	115
Planning Appeals	43, 94
Planning restrictions: compensation	188
Public Works and Municipal Services Congress	188, 216
Private Street Works: Ministry of Housing Survey	142
Publications	73
Rating Diploma Holders Section: Annual General Meeting	231, 312
Rating: Empty Houses	43
Rating Return for 1959-60	254
Rating Surveyor's Diary: 15, 68, 123, 183, 250, 309	
"Redevelopment of Decayed Areas": Discussion	63
Rent Restriction in Northern Ireland: Memorandum by the Northern Ireland Branch of the Institution	95
Rural Areas: new houses	49
Smoke Control: Ministry Paper	254
War Damage Commission: Annual Report	73
BUILDING AND QUANTITY SURVEYING	PAGE
Annual Conference, 1960: Quantity Surveyors' discussion	317
Building Research Station Digests	193, 320
City and Guilds of London Institute: examination for Quantity Surveyors' Assistants	108
Cost Research Panel	
Bill of Quantities: Questionnaire	132
Branch Cost Planning Course	132
Cost Planning	
Post-graduate course: review of report	133
Indices of Building Costs by Trades: two-storey and multi-storey housing	132
"Future Practice and Procedure in Quantity Surveying," by Dale	313
Housing Design: competition	320
"Law Reports on Building Cases," by Procter and Stogdon	27
"Practical Points: the Building Surveyor" by Holdsworth	255
"Practical Points: the Quantity Surveyor," by Dale	25
Productivity Association Conference	193
Publications	193, 320
"Quantity Surveying in Cumbernauld New Town," by Denton	189
Quantity Surveyors Committee	
Constitution: review	127
Minutes: extracts	27, 81, 319
Officers' Conference	133
Organisation in the Institution	194
Consortia: Employment of Quantity Surveyors	106, 108
Final Accounts: settlement	28
Sub-Committee: personnel	82
Standard Method of Measurement: heating and ventilating engineer	320
"Structural Steelwork and Reinforced Concrete for Framed Buildings: some notes on comparative economics," by Dunican	74
Technical Films	
"How a House was Built"	5
"Techniques in Quantity Surveyors' Offices," by Brett-Jones, King and Costman	24, 78
Wage Increases	
Electrical contracting industry	193

BUILDING AND QUANTITY SURVEYING —continued—

Heating, Ventilating and Domestic Engineering Work	28
Work in hand in Quantity Surveyors' Offices	82, 130

LAND SURVEYING AND MINING SURVEYING

"An Approach to Mineral Valuation," by Baxendale	83
Annual Conference, 1960: Mining Meetings Report	324
"Do it yourself aerial photography in Fiji," by Regnault and Walker	134
"The Education and Training of Mining Surveyors," by Potts and Wardell	195, 325
Field Survey Association: Annual Prize, 1960	91
Kenya: land policy	139
"The Lake Nyasa Hydrographic Survey," by Bailey	198
Ordinance Survey half-inch maps	43
Photogrammetry: Ninth International Congress	5, 50, 51, 285
"Photogrammetry: its Purpose and Applications," by Burnett	259
Publications	91, 139
"The Use of the Airborne Profile Recorder and Associated Equipment for Photogrammetric Mapping," by Smith, Hall, Eden and Smith	29, 88
"Surveying in Northern Australia," by Bomford	321

PARLIAMENTARY AND GENERAL

Bills before Parliament	44, 94
Building Societies Act, 1960	2, 106, 328
"Caravan Sites and Control of Development Act, 1960," by Glenny	329
Cases Reported (by name)	
Ackroyd and Sons v. Hasan	146
Airport Restaurants Ltd. v. Southend-on-Sea Corporation	268
Akerib v. Booth and Others, Ltd.	98
A. Martin French (a firm) v. Kingswood Hill, Ltd.	97
Arbuckle Smith & Co. Ltd. v. Greenock Corporation	270
Baker v. Merckel (Anson third party, White fourth party)	99
Bessley v. Hallwood Estates Limited	268
Burton v. West Suffolk County Council	209
Childs Trustee Co. v. Inland Revenue Commissioners	144
Ching Garage, Ltd. v. Chingford Corporation	272
Commissioners of Crown Lands v. Page	274
Diamond v. Campbell-Jones and Others	274
Duple Motor Bodies Ltd. v. Inland Revenue Commissioners. Same v. Ostime (Inspector of Taxes)	209
Evans v. Roper	272
A. E. Farr Ltd. v. Ministry of Transport	273

PARLIAMENTARY AND GENERAL —continued—

Gardner v. Blaxill and Another	274
Ghana Commercial Bank v. Chandiram and Another	271
Harry Ferguson Research, Ltd. v. Dawkins (VO); Harry Ferguson Research, Ltd. v. Warwick Rural District Council	145
Hayes, Trustee to Preload Company of Canada v. City of Regina (1960)	27
Holloway and Another v. Dover Corporation	209
Horwitz v. Rowson and Another	269
Jones v. Challenger	208
Legge and Another v. Matthews and Another	208
Longmuir v. Kew	272
Marshall v. Nottingham City Corporation	98
Mascherpa v. Direck Ltd.	208
Mounsden and Another v. Weymouth and Melcombe Borough Council	145
Parker and Another v. Clark and Another Peak (VO) v. Burley Golf Club. Harding (VO) v. Bramshaw Golf Club, Ltd.	145
Pemberton and Another v. Bright and Others	147
R. v. Agricultural Land Tribunal for the South Eastern Area, ex parte Bracey	273
R. v. Dorset Sessions Appeal Committee	269
R. v. Minister of Housing and Local Government, ex parte Chichester Rural District Council	270
Re Strand and Savoy Properties Limited	268
Routh Trustees v. Central Land Board	269
Stroud Building Society v. Delamont and Others	144
Taylor v. Ellis and Another	271
Trustees of Tollemache Settled Estates v. Coughtrie (Inspector of Taxes)	143
Victory (ex-services) Association, Ltd. v. Paddington Borough Council	98
Walls v. Peak (Valuation Officer)	270
Westcott v. Structural and Marine Engineers, Ltd.	207
Cases Reported (by subject)	
Agriculture	27, 207
Building	207
Compulsory Purchase	209
Contract	98, 146, 273
Discovery	208
Highway	209, 272
Landlord and Tenant	99, 268
Mortgage	271
Option to Purchase	272
Practice	97
Rates	98, 145, 270
Rent Restriction	208
Revenue	209
Town and Country Planning	98, 145, 269
Trust for sale	208
Company Law: Institution Memorandum	40, 215
Correspondence from Members	50, 103, 149, 210, 276, 336
Council on Tribunals: First Report	2
Esso Petroleum Bill	106
Finance Act, 1960, by Leach	203

PARLIAMENTARY AND GENERAL —continued—

"Legal Notes" by Bidder	
Breach of Contract	92
Charities Act, 1960	266
Clean Rivers (Estuaries and Tidal Waters) Act, 1960	204
Estate Agent's Commission	41
Eviction	204
Game Laws (Amendment) Act, 1960	141
Men of Bosham	141
Misfeasance and Non-Feasance	42
Nuisance Caused by Obstruction of Stream	265
Option to extend lease exercised by conduct	205
Town and Country Planning Act, 1947	140
Unlighted vehicle on highway at night	334
Verbal Contract	333
Library	
Additions	101
Annual Closing	44
Binding The Chartered Surveyor	275
Historical Collection	336
Photogrammetry: International bibliography	335
Publications Received	102, 148, 276
Reviews	44, 100, 147, 275
Valuation Offices: Address list	147
Local Employment Act	20
London County Council (General Powers) Act, 1960, by Leach	267
Local Government in Greater London: Royal Commission Report	278, 327
New Legislation	94, 106, 143
Offices Act, 1960	206
Planning Appeals	43, 94
Prevention of Fraud (Investments) Act, 1958: dealings in and notices relating to Securities	54
Private Street Works: Ministry of Housing Survey	142
Rating: Empty Houses	43
Rent Act, 1957	49, 206
Rent Restriction in Northern Ireland: Memorandum by the Northern Ireland Branch of the Institution	95
Schedule A taxation	49
Statutory Instruments 11, 44, 113, 143, 175, 207, 335	
JUNIOR ORGANISATION QUARTERLY	
"All Your Eggs in One Basket," by Beric Wright	47
Annual Dinner	107, 233
"Call me Madam Surveyor," by Chambers	46
Committee	
Election of London Section	5
"Far Cry from Bengal," by Ainslie	214
"First Year in Parliament," by Rees	213
"Goodbye Piccadilly . . ." by Davis	47
Here and There	45, 211
"Lire, Schillings, Dinars," by Knowles and Betts	213
News from Overseas	45
Notices of Meetings	53, 107, 233, 290
Quantity Surveyors Committee	
Ballot for election	53
"Reflections on Australia," by Carpenter	48
Residential Courses	48, 233



DIFFICULTIES CAN BE OVERCOME. It's all a question of know-how. The Reinforced Concrete Design Group of Expanded Metal specialise in the know-how of problem resolution in reinforced concrete. They do this on a responsible, independent, professional basis. They are at the service of Architects and Engineers at every stage of construction from the initial planning to the formal opening. If you would like to know more about RCDG and how they can help you, write today for further details.

REINFORCED CONCRETE DESIGN GROUP

An independent professional service for you

THE EXPANDED METAL CO. LTD., 16, CAXTON STREET, LONDON, S.W.1. Telephone ABBey 7766

Expamet



planning and rebuilding for the new London

The Architect's Department of the London County Council requires Building Surveyors, Planning Surveyors, Quantity Surveyors. Whatever changes in organisation may be made there is a vast programme of work to be done—new building, modernisation, rehabilitation, improvements, town planning, statutory supervision, maintenance, new towns, etc.

Applicants are immediately wanted for positions of Surveying Assistants (salary up to £950), Surveyors Grade III (up to £1250) and Surveyors Grade II (up to £1500) to work in:—

Quantities Division Preparation of Bills of Quantities for major building works; preliminary estimating and cost planning; pricing Bills for comparison with Tenders; preparation and settlement of final accounts and interim valuations for major and minor contracts.

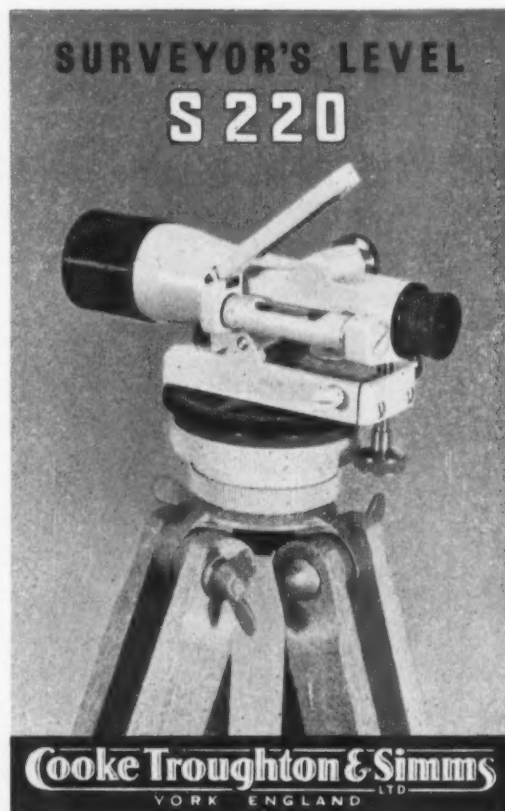
Building Regulation Division and District Surveyors' Service Work on applications under the London Building Acts and by-laws. Negotiations with developers and supervision of works in progress.

Maintenance Division, General Division, Housing Division Modernisation and improvement; surveys of existing buildings; preparation of sketch schemes, working drawings and specifications; supervision of works in progress. Jobs up to £50,000.

Town Planning Division Investigation of development proposals, surveys, report writing, preparation for public enquiries.

All positions pensionable • generous leave • recognition grants for exceptionally good work • promotion on merit • flexible salary reviews within grades • permanency after probationary service.

Telephone, write or call for further particulars and application form to Hubert Bennett, F.R.I.B.A., Architect to the Council, County Hall, S.E.1. WATERloo 5000, Ext. 7335, quoting ref: EK/3160/1.



FOR YOUR SUPPLIES OF NEW AND SECONDHAND

**LEVELS, THEODOLITES
and
ALL SURVEYING INSTRUMENTS**

consult

A. H. HALL & BROS. LTD.,
142, Upper Street, London, N.1
CANonbury 5685

**ALL MAKES OF INSTRUMENTS REPAIRED
—PROMPT AND EFFICIENT SERVICE—**

W. OTTWAY & CO. LTD.

Estbd. 1640

Manufacturers of Surveying & Photogrammetric Equipment

New Theodolites Levels and Allied Equipment
always available from Stock

United Kingdom Agents for Otto Fennel
Surveying Instruments and Accessories

Repairs to all makes We invite your enquiries

**ORION WORKS, NORTHFIELDS AVENUE,
EALING, W3**

Telephone: EALing 5844

APPOINTMENTS VACANT

A SENIOR NEGOTIATOR is required for a busy market town office of an old-established firm dealing principally in the East Hampshire West Surrey areas. A four-figure salary is envisaged for an experienced preferably qualified individual, able to deal with sales and lettings of all classes of urban and rural estate without supervision. Box 420, T. G. Scott & Son, Ltd., 1, Clement's Inn, London, W.C.2.

BOURNEMOUTH EDUCATION COMMITTEE BOURNEMOUTH MUNICIPAL COLLEGE OF TECHNOLOGY AND COMMERCE

Applications are invited for two appointments in the Department of Building, duties to commence in May, 1961:

- LECTURER to take primarily Surveying, together with Building Technology and ancillary subjects, in the full-time R.I.C.S. and part-time H.N.C. Building and H.N.C. Civil Engineering Courses;
- ASSISTANT GRADE B to take Quantities and Building Technology in the part-time O.N.C. and H.N.C. Building courses.

Applicants for both appointments must be corporate members of a professional institution such as A.M.I.C.E., A.R.I.B.A., or A.R.I.C.S. and have wide professional experience. Teaching experience is desirable.

Salary according to the Burnham Technical Scale, 1959, viz.:

Assistant Grade B, Men, £700 to £1,150 per annum, with additions for approved qualifications and training, increments above the minimum of the scale may be considered for approved professional experience.
Lecturer, £1,370 to £1,550 per annum.

Further particulars and form of application may be obtained from the Chief Education Officer, Town Hall, Bournemouth.

SURVEYORS' ASSISTANTS required for a wide variety of work in Architect's office. Should be proficient in chain surveying and levelling, a good draughtsman and of Intermediate R.I.C.S. standard. Good salary offered in accordance with ability. Applications to: John H. D. Madin, 83/85, Haglev Road, Edgbaston, Birmingham, 16.

QUANTITY SURVEYORS require qualified men for offices in Sydney and Perth, Australia. Write, stating age, experience and salary required, Box 339, T. G. Scott & Son, Ltd., 1, Clement's Inn, Strand, London, W.C.2.

SOUTH-WEST. Old Established Chartered firm require qualified Assistant in charge of property and chattels department. Good salary and prospects. Pension Scheme. Preferably 30-35 years and car owner. State age, qualifications and experience. Box 426, T. G. Scott & Son Ltd., 1, Clement's Inn, London, W.C.2.

BIRMINGHAM REGIONAL HOSPITAL BOARD ARCHITECT'S DEPARTMENT

SURVEYING ASSISTANT (BUILDING). To assist in survey of existing hospital buildings and carrying out minor capital schemes. Intermediate R.I.C.S. or exemption therefrom essential. Salary scale £625-£900 per annum. Commencing salary according to age and experience. Written applications, naming two referees to Secretary, 10, Augustus Road, Birmingham, 15, by 10th February, 1961.

CITY OF SHEFFIELD

ASSISTANT VALUERS

Applications are invited for vacancies for Assistant Valuers on the permanent staff of the Estates Surveyor, Mr. W. H. Rothwell, B.Sc., F.R.I.C.S.

Applicants must have passed the Final Examination of the Royal Institution of Chartered Surveyors (Valuation), the Chartered Auctioneers' and Estate Agents' Institute, or equivalent, and have experience of valuations and negotiations for the acquisition and leasing of land and property.

Commencing salary within the scale £960-£1,310 p.a. Experience taken into account when fixing point of entry to scale. Annual increments. Five day week. The posts are superannuable and subject to N.J.C. Conditions of Service and medical examination.

Applications stating age, qualifications and experience, with details of present post and salary and the names of two referees, should be addressed to the undersigned.

JOHN HEYS,
Town Clerk.

Town Hall,
Sheffield, 1.

COST PLANNING, ETC.—South Wales Firm of Chartered Quantity Surveyors have vacancy for Professional Associate with experience and particular interest in Cost Planning, Elemental Estimates and Statistics in addition to taking-off. Busy office dealing with large variety of buildings. Pension and Sickness Schemes available. Reply stating age, experience and salary required to Box 423, T. G. Scott & Son, Ltd., 1, Clement's Inn, London, W.C.2.

CITY OF SHEFFIELD

APPOINTMENT OF TRAINEE ASSISTANTS

Applications are invited from young men aged at least 17, and having passes in the General Certificate of Education in five or more subjects including English, Mathematics and History or Geography, so as to be eligible for student membership of the Royal Institution of Chartered Surveyors. Four year period of training. Salary, Grade H.G. £290-£420 p.a.

Applications to be addressed to Mr. W. H. Rothwell, B.Sc., F.R.I.C.S., Estates Surveyor, Town Hall, Sheffield, 1, not later than 16th January, 1961.

OLD ESTABLISHED firm of Chartered Quantity Surveyors in South West Lancashire has vacancy for Corporate Surveyor aged between 35 and 40 with a view to partnership after satisfactory trial period. Preference will be given to candidate who had active war service. Box 425, T. G. Scott & Son, Ltd., 1, Clement's Inn, London, W.C.2.

EAST ANGLIA—required in the New Year a Junior Surveyor to act as Partner's personal Assistant. Must be at least Intermediate standard R.I.C.S. and have sound knowledge of building construction. Very good prospects. Reply in confidence giving fullest details, suggested starting salary and date available to Box 424, T. G. Scott & Son, Ltd., 1, Clement's Inn, London, W.C.2.

ARCHITECTS AND MAINTENANCE

SURVEYORS. Pensionable posts for men and women at least 25 and under 35 on 1.1.61 (extension for regular Forces service, Overseas Civil Service, established civil service and temporary Government service as Architect or Maintenance Surveyor). Candidates must be registered Architects or, alternatively, for Maintenance Surveyor posts, have achieved Corporate Membership of R.I.C.S. (Building Surveying Section), or have passed examinations necessary for attaining Corporate Membership. London salary, £830-£1,125 according to age, rising to £1,300. Promotion prospects. Write Civil Service Commission, 17, North Audley Street, London, W.1, for application form quoting S 60-61.

FORD MOTOR COMPANY LIMITED

require an experienced Assistant age 25-35 in their Estate Management Department at Dagenham. Applicants should be familiar with acquisition, leasing and valuation of industrial and commercial properties. Knowledge of rating, town planning and building bye-laws necessary. Good draughtsman preferred. This position has excellent prospects, with a non-contributory pension scheme and a basic 5-day week. Please write giving brief details and quoting reference KEA to:

Mr. H. C. Crawford,
Training & Recruitment Dept.,
Ford Motor Company, Ltd.,
Dagenham, Essex.

MID-ESSEX. Assistant Surveyor required by busy professional firm. Preferably between 20 and 30 years of age. Should be capable of carrying out Building Society surveys without supervision and have working knowledge of current legislation, particularly relating to compensation. Car owner or driver essential. Intermediate examination of R.I.C.S. or C.A.I. essential. Write in confidence stating age, experience and salary required to Box 403, T. G. Scott & Son, Ltd., 1, Clement's Inn, London, W.C.2.

There is nothing to equal

LEAD PIPE

for close-grouped

soil and waste pipe work

THE LEAD SHEET AND PIPE TECHNICAL INFORMATION BUREAU

h advises on the use of Lead in building work. Most of the many uses are detailed in the Association's publications, and in addition the Bureau's technical officers are always glad to give individual assistance.

LEAD DEVELOPMENT ASSOCIATION
18, ADAM STREET, LONDON, W.C.2.

Telegrams: Leadevop, Rand, London Telephone: WHItchall 4175

P1/61

REKAB

INSTRUMENTS LTD

STANDARD QUANTITY SURVEYORS SCALES

These scales read from the left, with second row of numerals inverted to permit the scale to be used in the reversed position. In this way there is no possibility of confusion arising because of graduations bearing two different numbers.

Four scales available, each with two scales, engine divided:

$\frac{1}{8}$ in. and $\frac{1}{4}$ in. = 1 ft.
 $\frac{1}{4}$ in. and $\frac{1}{2}$ in. = 1 ft.
 $\frac{1}{2}$ in. and 1 in. = 1 ft.
 $\frac{3}{4}$ in. and 1½ in. = 1 ft.

Set of four scales, celluloid edge £3 6s. 6d.
Mahogany Case £1 6s. 0d.
Individual celluloid edge scales 17s. 0d. each

Set of four scales, boxwood £1 11s. 6d.
Mahogany Case £1 6s. 0d.
Individual boxwood scales 8s. 6d. each

263-4 HIGH HOLBORN LONDON WC1

HOLBORN 1417 & 4004

LANDS OFFICER**GOVERNMENT OF SIERRA LEONE**

Administrative and executive duties in connection with leases and short term tenancies of native lands, advising tribal authorities regarding leases and terms, land utilisation, valuations, establishing a system of land records, land acquisition and settlement of claims.

Contract appointment for 2 tours. Salary range £1,300—£1,924 with gratuity. Children's allowance. Free passages. Rented quarters.

Candidates, preferably under 45 years, must be A.R.I.C.S. (Valuation) or A.L.A.S. or A.A.I. or possess a degree in Estate Management, and have at least one year's experience after qualifying.

Write Director of Recruitment, Colonial Office, London, S.W.1, giving full names, age, qualifications and experience, quoting BCD 103/15.02 E3.

QUANTITY SURVEYORS

Pensionable posts for men and women in:

ADMIRALTY
AIR MINISTRY
MINISTRY OF EDUCATION
MINISTRY OF HEALTH
MINISTRY OF HOUSING AND LOCAL GOVERNMENT
DEPARTMENT OF AGRICULTURE AND FISHERIES FOR SCOTLAND
DEPARTMENT OF HEALTH FOR SCOTLAND
MINISTRY OF WORKS

Age at least 25 and under 35 on 1.1.61 (extension for regular Forces service, Overseas Civil Service, established civil service and temporary Government service as Quantity Surveyor). Candidates must have achieved Corporate Membership of R.I.C.S. (Quantities Section) or have passed examinations necessary for attaining such membership. London salary, £830—£1,125 according to age, rising to £1,300. Promotion prospects. Write Civil Service Commission, 17, North Audley Street, London, W.1, for application form quoting S/63.

ASSISTANT TOWN AND COUNTRY PLANNING OFFICER**GOVERNMENT OF BARBADOS**

To assist the Town and Country Planning Officer in the preparation and administration of development plans.

Contract appointment (3 years). Salary £1,500. Gratuity 20 per cent. of salary. Free passages. Unfurnished quarters at moderate rent.

Candidates must be A.M.T.P.I., preferably with an additional qualification.

Write Director of Recruitment, Colonial Office, London, S.W.1, giving full names, age, qualifications and experience, quoting BCD 62/28.02 E3.

LEADS—Assistant Surveyor required by old-established urban practice. Applicants should be qualified. (Final standard might be considered) and be able to work without close supervision. Knowledge of Leeds and the West Riding is preferable. Excellent prospects for the right man. Please write giving full details of experience and salary required. Box 429, T. G. Scott & Son, Ltd., 1, Clement's Inn, London, W.C.2.

LAING**LAING DEVELOPMENT COMPANY LIMITED**

require the following staff:

EXPERIENCED VALUATION SURVEYOR

Preferably with knowledge of property development and estate management and accustomed to act on own initiative. Knowledge of the provinces an advantage. Applicants should be A.R.I.C.S. or A.A.I.

ASSISTANT VALUATION SURVEYOR

for work in the London area. A.R.I.C.S. or A.A.I., preferably with experience of acquisition, development, letting and disposal of properties and sites.

TWO ASSISTANT BUILDING SURVEYORS

between ages 25 - 32 with good knowledge of building construction, quantities, elementary estimating and contract practice and procedure. Preferably trained as either estimator or quantity surveyor.

All the above posts are based at the Head Offices of the Company in North London. Attractive salary, Contributory Pension Scheme and other benefits are offered to the right candidates, together with excellent prospects in a progressive and expanding organisation.

Applications in writing to:

Personnel Manager (D.S.I.),
John Laing and Son (Holdings) Limited,
London, N.W.7.

NATIONAL COAL BOARD—EAST MIDLANDS DIVISION

Applications are invited for the post of Divisional Estates and Housing Manager which will become vacant early in 1961. Applicants should have wide experience of urban and rural estate management and valuations. Membership of the R.I.C.S. in the appropriate Divisions, or equivalent, would be an advantage. Salary range £1,975—£2,700.

The successful applicant would be appointed as Chief Assistant to the Divisional Estates and Housing Manager at a lower salary until the principal post becomes vacant. Previous applicants need not re-apply.

Applications stating age, qualifications and experience should be addressed to the—

Staff Director, National Coal Board,
East Midlands Division,
Sherwood Lodge,
Arnold,
Nr. Nottingham.

quoting S.V. 1081.

MIDDLESEX COUNTY COUNCIL COUNTY ARCHITECT'S DEPARTMENT

BUILDING SURVEYORS required APT. II (£815—£960) and APT. I (£645—£815) plus London Weighting up to £40. Duties in connection with the maintenance of properties. Established. Prescribed conditions. Application forms (s.a. f'scap. c.) from County Architect, 1, Queen Anne's Gate Buildings, Dartmouth Street, S.W.1, returnable by 11th January. (Quote F.2T.JOTRICKS.)

NATIONAL COAL BOARD—EAST MIDLANDS DIVISION

Applications are invited for the post of Chief Assistant to the Divisional Estates and Housing Manager. Applicants should have experience of urban or rural estate management and valuations. Membership of the R.I.C.S. in the appropriate Divisions, or equivalent, would be an advantage. Salary range £1,375—£2,050.

Applications stating age, qualifications and experience should be addressed to the—

Staff Director,
National Coal Board,
East Midlands Division,
Sherwood Lodge,
Arnold,
Nr. Nottingham.

quoting S.V. 1082.

PARTNERSHIP OR PRACTICE REQUIRED

F.R.I.C.S., F.A.I. Principal in private practice seeks partnership in pleasant surroundings. West End, City and Provincial experience. Useful contacts. Qualified in both Urban and Rural sections. Age 37. Main interests Agency, Estate Development and Investments. Preference for first-class firm in London, not suburbs. Would consider outright purchase of market/county town type of practice. Box 428, T. G. Scott & Son, Ltd., 1, Clement's Inn, London, W.C.2.

New & Reconditioned SURVEYING APPARATUS

Guaranteed Levels and Theodolites from stock

Also Land Chains, Steel and Linen Tapes,
Surveyors' Measuring Rods, Ranging Poles
and Levelling Staves

We purchase modern 3-screw **THEODOLITES** for cash
Repairs carried out to all makes of Surveying Instruments

BRUNNINGS 133 HIGH HOLBORN, LONDON, W.C.1
(HOLBORN) LTD.

Phone: HOLBORN 4894 & 0312

Established 1922

SZERELMEY SILICONE

Waterproofs and Preserves all Masonry

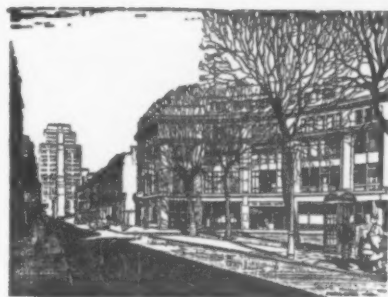
Ask for

SZERELMEY SILICONE LIQUID

No. 103

SZERELMEY LIMITED

227 Rotherhithe New Road, London, S.E.16.



USE THE BUILDING CENTRE

for all your problems relating to building materials and equipment

Write, Call or telephone

Open—Monday to Friday, 9.30 a.m.—5 p.m.

Saturday, 9.30 a.m.—1 p.m.

26 Store Street, LONDON, W.C.1

Telephone: Museum 5400—10 lines

LONGDEN

OF SHEFFIELD

Public Works and
Civil Engineering
Contractors

ST. PETER'S CLOSE,
HARTSHEAD, SHEFFIELD, 1.

Telephone: Sheffield 26457

SURVEYING EQUIPMENT

WE
HIRE
SELL and
REPAIR

Theodolites,
Levels, Staves,
Ranging Rods,
Chains and
Arrows, Steel
Tapes, etc.

Modern instruments
bought or taken
in part exchange



Clarkson's

ESTABLISHED OVER 150 YEARS

DEPT. SM, 338 HIGH HOLBORN, LONDON, W.C.1
(Opposite Gray's Inn Road) Phone: HOLborn 2149

MULLEN & LUMSDEN

LIMITED

Contractors and Joinery Specialists

41, EAGLE STREET, HOLBORN,
LONDON, W.C.1

Telephone: CHAncery 7422/3, 4

Branches:

5 Coptic St., W.C.1
Tel.: Museum 3705

Southampton
Tel. No. 73176

Contract Documents, typed, duplicated,
and bound.

We are Specialists.

COPY-ART

168, Victoria Street, London, S.W.1.

Telephone: VICtoria 2747

STAFF SUPPLIED

Planning for completion on time

There is no secret behind the Company's reputation for finishing on time. The key to it is insistence on clearing up problems at the *planning stages* of the scheme—before the answers become expensive—it is as simple as that.

Detailed consultation and collaboration—then get on with the job—that is a principle which has been proudly vindicated in many large projects successfully carried out throughout the world—proving that whatever the job, and wherever it may be, it *will* be completed on time.

LAING

**BUILDING AND CIVIL
ENGINEERING CONTRACTORS**

Great Britain and Overseas

